

ANGELOS BARMPOUTIS, Ph.D.

Professor of Digital Arts and Sciences

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SHORT BIO

Angelos Barmpoutis is a Professor of Digital Arts and Sciences and coordinator of research and technology at the Digital Worlds Institute, University of Florida College of the Arts, with affiliate faculty appointments in the Department of Computer & Information Science and Engineering and the Center for the Arts, Migration, and Entrepreneurship. Since 2010, as the Institute's inaugural tenure-track faculty member, he has helped build an interdisciplinary academic unit bridging the arts with other disciplines, developing curricula that now serve more than 500 undergraduates a year, alongside a graduate program in immersive technologies. His research investigates computational systems as creative collaborators, spanning AI-driven analysis of human and dance movement, virtual and augmented reality, computational storytelling and games, 3D capture and analysis of cultural-heritage, and has produced 80+ peer-reviewed publications, delivered 100+ public talks as keynote, plenary, and panel speaker, has issued and pending patents, and over \$8.9M in competitive external funding from NEH, NSF, NIH, the Andrew W. Mellon Foundation, the Robert Wood Johnson Foundation, and industry partners. His inventions have been praised for their innovation, and societal impact, including a collaborative product with health sciences that received FDA De Novo classification. He is the Chair of the Interactive and Emerging Media curricular area at UF and was named UF Research Foundation Professor (2020–2023).

AREAS OF EXPERTISE

Primary: AI in the Arts • 3D Computer Vision & Visualization • Virtual, Augmented & Extended Reality • Human Movement & Motion Analysis • Game Engines & Shaders • Digital Cultural Heritage

Secondary: Creative-Technology Entrepreneurship • Biomedical Imaging & AI Diagnostics

PROFESSIONAL EDUCATION

- Ph.D., Computer Engineering, **University of Florida**, May 2009
- M.Sc., Electronics and Electrical Engineering, **University of Glasgow**, December 2004
- B.Sc., Computer Science, summa cum laude, **Aristotle University of Thessaloniki**, June 2003

CONTINUING EDUCATION

- Authentic Leadership. Division of Continuing Education, **Harvard University**, December 2005
- Ethical Leadership. Division of Continuing Education, **Harvard University**, December 2024

ACADEMIC APPOINTMENTS

- 2024-2027: **Chair, Interactive and Emerging Media curricular area**, Digital Worlds Institute, Univ. of Florida
- 2023–present: **Professor of Digital Arts and Sciences**, Digital Worlds Institute, University of Florida
- 2014–2023: **Associate Professor of Digital Arts and Sciences**, Digital Worlds Institute, University of Florida
- 2013–present: **Affiliate Professor of Biomedical Engineering**, University of Florida
- 2011–present: **Affiliate Professor of Computer & Information Science and Engineering**, University of Florida
- 2014: **Visiting Research Faculty**, Institut für Informatik, Universität Leipzig
- 2010–2014: **Assistant Professor of Digital Arts and Sciences**, Digital Worlds Institute, University of Florida

REPRESENTATIVE INTERDISCIPLINARY PROJECTS

Selected interdisciplinary creative-research projects highlighting cross-disciplinary collaborations:

- **AI-based recognition and attribution of Afrogenic dance movements** — integrates computational motion analysis with performance studies; presented at ACM IMX 2026 and A2RU National Conference, 2026 (<https://dl.acm.org/doi/10.1145/3788851.3805020>). — *Funded by the Robert Wood Johnson Foundation*
- **Developing Mini VR Game Engines** as an Engaging Learning Method for Digital Arts & Sciences —*best-paper award in IEEE ISEC Conference*
<https://doi.org/10.1109/ISEC57711.2023.10402239>
- **Digital Epigraphy Toolbox** for 3D digitization, UV map estimation, and analysis of ancient inscriptions – *Funded by NEH, adopted by the Library of Congress, Cornell University, UK National Archives, University of Lyon, University of Venice* (<https://www.digitalepigraphy.org/>)
- **3D digitization of the Rosetta Stone** for the British Museum, part of the long-running Digital Epigraphy and Archaeology initiative (<https://github.com/digitalepigraphy/RosettaStone>) — *Featured in National Geographic's "Strangest Things" series*
- **3D Visualization of Primate Fossils** – scientific tool developed in Unity 3D to visualize CT scans as 3D models processed with Slicer 3D – *Funded by NSF in collaboration with the Department of Anthropology*
- **Java-for-Quest (J4Q)** — open-source framework enabling Java development for Meta Quest headsets in Android Studio (<https://github.com/digitalworlds/JavaForQuest>) — *Award-winning IEEE ISEC*

- **Imagineering and the Technosphere** – interdisciplinary project *that studies the accelerating pace of social technologies, such as the Internet and Artificial Intelligence.* – Funded by Andrew W. Mellon Foundation <https://digitalworlds.github.io/technosphere/>
- **Assessing the Role of Virtual Reality with Passive Haptics in Music Conductor Education** — *in collaboration with the School of Music; Published in HCII Conference* https://doi.org/10.1007/978-3-030-49695-1_18
- **Games for Literacy Education** – web-based games developed in collaboration with UF Literacy Institute –*used more than 150,000 times per day; adopted by 27 states.* <https://doi.org/10.33424/FUTURUM547>
- **Web-based automated imaging differentiation platform** for AI-assisted diagnostic technology for Parkinsonism used across 21 clinical sites — *Resulted in issued/pending patents, FDA approval and NIH-supported commercialization via University-spined startup* <https://neuropacs.com/>

PUBLISHED SOFTWARE & CREATIVE-TECHNOLOGY SYSTEMS

Software used by researchers at MIT, Cornell, UC Berkeley, Boston University, INRIA, UNC Chapel Hill, University of Strasbourg, SRI International, University of Wisconsin, University of Minnesota, and other institutions.

- UPose (2026)— Unity 3D framework for live avatar animation using MediaPipe body stream. <https://github.com/digitalworlds/UPose>
- J4Q – Java for Meta Quest (2026) — Android Studio framework for developing Meta Quest apps in Java. <https://github.com/digitalworlds/JavaForQuest>
- Android For Beginners (2023) —instructional Android Studio apps for mobile and wearables. <https://github.com/digitalworlds/AndroidForBeginners>
- AIDP — web-based tool for automated imaging differentiation of Parkinsonism, deployed at 21 partner universities/health institutes (2021) <https://neuropacs.com>
- UFLI Educational Apps — literacy apps developed with the UF Literacy Institute; 1,000,000+ K–2 users (2020); companion to UFLI Foundations, Ventriv Learning, 2022. <https://research.dwi.ufl.edu/op.n/file/Impiv7795p3aml94/>
- VisiNeat (VN API) — API for rapid prototyping of cross-platform interactive 3D web applications (2016)
- DMDDDB — Drivers' Motion Depth Database, 523 open-access depth sequences (2014)
- J4K — Java for Kinect library (2013), adopted internationally including by Institut Pasteur (ICY) and UFPE, Brazil (MARINE); <https://abarmipou.github.io/ufdw/j4k/>
- Digital Epigraphy Toolbox — 3D online tool for UV-map reconstruction of ancient inscriptions (2012) <https://www.digitalepigraphy.org/>

PATENTS AND COPYRIGHTS

- “Real-time Reconstruction of the Human Body and Automated Avatar Synthesis using low-cost infrared sensors,” Inventor: A. Barmpoutis. U.S. Patent 10,121,273 B2, awarded November 6, 2018. <https://patents.google.com/patent/US10121273B2/>
- “Brain Activating Replacement Method for Teaching Computer Programming,” Inventor: A. Barmpoutis. U.S. Copyright Reg. No. TXu 2-056-343, registered August 18, 2017.
- “Automated neurodegeneration index for neurological disease,” Inventors: D.E. Vaillancourt, A. Barmpoutis, J. DeSimone. Prov. Appl. No. 63/867,212, filed August 20, 2025.
- “Systems and Methods for Identifying Dementia Types And/Or Rate of Progression Using Imaging Biomarker,” Inventors: D.E. Vaillancourt, A. Barmpoutis. US Patent Appl. 63/584,986; PCT/615729WO, published September 25, 2023.
- “Face relighting from a single image.” PCT/US2009/044533, published November 26, 2009.
- “Positive semi-definite high-order tensor estimation with applications to DW-MRI.” PCT/US2009/037774, published September 24, 2009.

EXTERNAL FUNDING FOR INTERDISCIPLINARY PROJECTS

More than **\$8.9M** in competitive external funding secured from NIH, NSF, NEH, the Andrew W. Mellon Foundation, the Robert Wood Johnson Foundation, the U.S. Department of Transportation, and industry partners including Intel and Verizon.

- **July 2023 – June 2024** — ATUNDA: An AI Deep Tech Solution for Afrogenic Dance move Recognition. Robert Wood Johnson Foundation 79829. Project co-Director. **\$439,336**
- **Sept 2024 – Aug 2026** — Clinical performance testing of neuropacs™ in Parkinsonism diagnosis. NIH NIA/NINDS 2R42NS132614-02. Principal Investigator. **\$1,647,650**
- **May 2023 – Apr 2026** — Collaborative Research: 3D Visualization of Dentofacial Development in Primates. NSF 2235578. Senior Faculty. **\$392,605 / \$21,736**
- **Apr 2021 – Mar 2026** — Web-based Automated Imaging Differentiation of Parkinsonism. NIH U01 NS119562-01. Multi-PI. **\$4,777,251 / \$340,553**
- **Jan – Dec 2021** — AI-driven Movement Classification and Analysis across Clinical and Cultural Application Areas. UF AI Catalyst Fund. Principal Investigator. **\$50,000**
- **Aug 2019 – Aug 2020** — Consumer Video Product for the Monster Jam Ride Truck. FELD Entertainment. Principal Investigator. **\$16,500**
- **Aug 2019 – Aug 2020** — Virtual Reality: A Next-Generation Tool to Improve Waste and Materials Management. PTP Strategies, LLC. Principal Investigator. **\$16,500**
- **Aug 2018 – Aug 2021** — Intersections on Technology, Space, and Time. Andrew W. Mellon Foundation. co-Investigator. **\$400,000 / \$30,000**

- **Aug 2018 – Aug 2019** — CDD-SORT: ML System to Detect Recyclable/Problematic Materials in Construction Debris. PTP Strategies / EPA SBIR. Faculty coach/consultant. **\$16,500**
- **Aug 2017 – Aug 2018** — Central Office Visually Enhanced Asset Tracking and Management System. Verizon, Inc. Principal Investigator. **\$16,500**
- **June 2017 – May 2019** — 3D Digitization of the Squeeze Collection, University of Venice (Digital Epigraphy Toolbox). Ca' Foscari University of Venice. Consultant. **€70,000**
- **Dec 2015 – May 2016** — Development of interactive 3D multimedia visualization. Intel, Inc. (corporate gift). **\$20,000 (hardware)**
- **Sept 2015 – Aug 2018** — Dysmetria & Motor Function in SCA: Mechanisms and Rehabilitation. NIH-NINDS R21 NS094946. Investigator. **\$421,788 / \$69,411**
- **Jan 2015 – June 2016** — E-STAMPAGES. French Ministry of Higher Education, BSN5 2014. Consultant. **€53,500**
- **Sept 2014 – Sept 2015** — Novel framework for physical tele-therapy using infrared depth sensors and haptic feedback. UF Informatics Institute Seed Fund. Principal Investigator. **\$48,943**
- **Sept 2013 – June 2015** — Investigating the effect of drivers' body motion on traffic safety. US DOT / STRIDE 2013-051S. Principal Investigator. **\$132,972**
- **May 2012 – May 2013** — K3D: An Augmented-Reality Distance Education Classroom. UF Office of CIO. Principal Investigator. **\$87,000**
- **June 2011 – Dec 2012** — Digital Epigraphy Toolbox. National Endowment for the Humanities, Office of Digital Humanities, HD-51214-11. Project Director. **\$50,000**
- **Mar 2011 – Mar 2012** — Game technology to enhance sensory input and promote walking recovery. UF CTSI / NIH. co-Investigator. **\$7,500**

SELECTED PUBLICATIONS

80+ peer-reviewed publications, including 20+ journal articles, 8 book chapters, and 50+ conference proceedings papers. Full list, with links and abstracts, can be found in the interactive portfolio at:

<https://digitalworlds.github.io/angelos>

Refereed Conference Proceedings

- [91] T. Pank, D. Carrascosa, Q. Onikeku, J. Frusco, O. Craig, A. Barmpoutis, “Real-Time Computer-Assisted Afrogenic Dance Move Recognition and Analysis,” *ACM Interactive Multimedia Experiences (IMX)* '26, 2026, pp. 316–327.
<https://dl.acm.org/doi/10.1145/3788851.3805020>
- [90] C. Conroy, G. Brunetti, A. Barmpoutis, E. Fox, “Integrated Telehealth and Extended Reality to Enhance Home Exercise Adherence Following Total Hip and Knee Arthroplasty,” *IEEE VR Workshop on XR for Healthcare*, 2025, pp. 955–964.
<https://doi.org/10.1109/VRW66409.2025.00195>

- [89] L. Kemper, J. Lam, M. Levine, A.W. Pifer, H.J. Seung, M. Santoso, A. Barmpoutis, "Assessing the Influence of Passive Haptics on User Perception of Physical Properties in VR," *HCI 2024, LNCS 14707*, pp. 191–200. https://doi.org/10.1007/978-3-031-61044-8_14
- [88] J. Delgado, R. West, A. Barmpoutis, S.H. Jang, E. Stanley, H. Kang, "Enhancing Museum Experience with VR by Situating 3D Collections in Context," *ACM Interaction Design and Children 2024*, pp. 670–675. <https://doi.org/10.1145/3628516.3659372>
- [87] R. Garrett, J. Gast, S. Henry, K. Mellili, H.J. Seung, M. Santoso, A. Barmpoutis, "Investigating how interaction with physical objects within virtual environments affects knowledge acquisition and recall," *HCI 2024, CCIS 2116*, pp. 33–40. https://doi.org/10.1007/978-3-031-61950-2_4
- [86] A. Barmpoutis, W. Guo, I. Said, "Developing Mini VR Game Engines as an Engaging Learning Method for Digital Arts & Sciences," *IEEE Integrated Stem Education 2023*, pp. 33–36. <https://doi.org/10.1109/ISEC57711.2023.10402239>
- [85] W. Guo, W. Brisbane, R. Ashouri, B. Nguyen, A. Barmpoutis, "Prostate Capsule Segmentation in Micro-Ultrasound Images Using Deep Neural Networks," *IEEE ISBI 2023*, pp. 1–5.
- [84] W. Guo, O. Craig, T. Difato, J. Oliverio, M. Santoso, J. Sonke, A. Barmpoutis, "AI-driven Human Motion Classification and Analysis using Laban Movement System," *HCI 2022, LNCS 13319*, pp. 201–210. https://doi.org/10.1007/978-3-031-05890-5_16
- [83] A. Barmpoutis et al., "Assessing the Role of Virtual Reality with Passive Haptics in Music Conductor Education: A Pilot Study," *HCI 2020, LNCS 12190*, pp. 275–285. https://doi.org/10.1007/978-3-030-49695-1_18
- [82] A. Barmpoutis et al., "Virtual Kayaking: A study on the effect of low-cost passive haptics on the level of immersion while exercising," *HCI 2020, CCIS 1225*, pp. 147–155. https://doi.org/10.1007/978-3-030-50729-9_20
- [81] A. Barmpoutis, K. Huynhu, "Name Tags and Pipes: Assessing the Role of Metaphors in Students' Early Exposure to Computer Programming Using Emoticoncoding," *AISC 785, 2019*, pp. 194–202.
- [80] M. Suvajdzic, J. Oliverio, A. Barmpoutis, L. Wood, P. Burgermeister, "Discover DaVinci – A Gamified Blockchain Learning App," *IEEE IC on Blockchain and Cryptocurrency 2020*. <https://doi.org/10.1109/ICBC48266.2020.9169470>
- [79] A. Barmpoutis, "Learning Programming Languages as Shortcuts to Natural Language Token Replacements," *18th Koli Calling Conference, 2018*, pp. 1–10. <https://doi.org/10.1145/3279720.3279721>
- [78] A. Barmpoutis, "Integrating algebra, geometry, music, 3D art, and technology using emoticoncoding," *IEEE Integrated STEM Education Conference 2018*, pp. 30–33. <https://doi.org/10.1109/ISECon.2018.8340500>

- [77] A. Barmpoutis, "Analytical Mapping of Linear Walk from Infinite Virtual Space to Finite Real Space," *9th Intl Conf. Virtual Augmented and Mixed Reality, LNCS 10280*, 2017, pp. 3–14.
- [76] A. Barmpoutis, K. Huynh, P. Ariet, N. Saunders, "Assessing the Effectiveness of Emoticon-Like Scripting in Computer Programming," *AHFE 2017, AISC 598*, pp. 63–75.
- [75] A. Barmpoutis, E. Bozia, "Augmenting the Workspace of Epigraphists. An interaction design study," *EAGLE 2016, Collana Convegni 36*, pp. 209–220.
- [74] A. Barmpoutis, Q. Ding, L. Anthony, W. Eugene, M. Suvajdzic, "Exploration of Kinesthetic Gaming for Enhancing Elementary Math Education," *IEEE VR Workshop*, 2016, pp. 1–4.
<https://doi.org/10.1109/KELVAR.2016.7563674>
- [73] A. Kondyli, A. Barmpoutis, V. Sisiopiku, et al., "Analyzing 3D Body Posture Activity during Merging and Lane Changing Maneuvers," *Road Safety & Simulation Intl Conf.*, 2015, pp. 1–12.
- [72] A. Barmpoutis, E. Bozia, D. Fortuna, "Interactive 3D Digitization, Retrieval, and Analysis of Ancient Sculptures, using Infrared Depth Sensors for Mobile Devices," *UAHCI 2015, LNCS 9178*, pp. 3–11.
- [71] J. Oliverio, A. Barmpoutis, C. Juehring, A. Yudin, "Enhancing Global Collaboration Through Network-empowered Live Performance," *Electronic Visualization & the Arts 2015*, pp. 32–39. <https://doi.org/10.14236/ewic/eva2015.3>
- [70] A. Barmpoutis, I. Elsner, E. Fox, S. Flynn, "Augmented-reality environment for locomotor training in children with neurological injuries," *MICCAI Workshop*, 2014, pp. 108–117.
https://doi.org/10.1007/978-3-319-10437-9_12
- [69] E. Bozia, R. Wagman, A. Barmpoutis, "Open-Access Epigraphy: Electronic Dissemination of 3D Digitized Epigraphic Material," *EAGLE 2014, Paris*, pp. 421–435.
- [68] A. Kondyli, V. Sisiopiku, L. Zhao, A. Barmpoutis, "Comparative Analysis of Driving Maneuvers Using 3D Body Posture Data," *AHFE 2014*, pp. 4416–4425.
- [67] A. Kondyli, V. Sisiopiku, A. Barmpoutis, "A 3D experimental framework for exploring drivers' body activity using infrared depth sensors," *ICCVE 2013*, pp. 574–579.
- [66] A. Barmpoutis, B.C. Vemuri, "A unified framework for estimating Diffusion Tensors of any order with sym. positive-definite constraints," *IEEE ISBI 2010*, pp. 1385–1388.
- [65] A. Barmpoutis, R. Kumar, B.C. Vemuri, A. Banerjee, "Beyond the Lambertian Assumption: A generative model for Apparent BRDF fields of Faces using Anti-Symmetric Tensor Splines," *IEEE Computer Vision and Pattern Recognition 2008*, pp. 1–6.
<https://doi.org/10.1109/CVPR.2008.4587770>
- [64] A. Barmpoutis, B.C. Vemuri, J. Forder, "Robust Tensor Splines for Approximation of Diffusion Tensor MRI Data," *MMBIA Workshop – IEEE Computer Vision and Pattern Recognition 2006*, pp. 86–72.

- [63] A. Barmpoutis, G.X. Ritter, “Orthonormal Basis Lattice Neural Networks,” *FUZZ06*, 2006, pp. 331–336.
- [62] A. Barmpoutis, “Morphological Neural Networks with Orthonormal Basis Dendrites,” *ACMSE06*, 2006, pp. 244–248.
- [61] A. Barmpoutis, N. Nikolaides, I. Pittas, “Face 3D Pose Estimation Using a Generic 3D Face Model and Facial Feature Extraction,” *Panhellenic Conf. Informatics*, 2003, pp. 519–526.

Book Chapters

- [60] A. Barmpoutis and E. Bozia, “Epigraphy going digital: Tools and methods.” In *Oxford Handbook of Digital Classical Studies*, *Oxford University Press*, 2026, pp. 260–273.
<https://doi.org/10.1093/9780197835210.003.0032>
- [59] A. Barmpoutis and E. Bozia, “Reinscribing the 3rd dimension in epigraphic studies and transcending disciplinary boundaries.” *Ausonius éditions*, Dec 2023, pp. 79–94.
<https://doi.org/10.46608/primaluna27.9782356135469.5>
- [58] M. Amin, A. Barmpoutis, M. Berti, E. Bozia, J. Hensel, F. Naether, “The Digital Rosetta Stone Project.” In *Ancient Egypt, New Technology*, *Harvard Egyptological Studies* 17, Brill, Mar 2023, pp. 58–84.
- [57] A. Barmpoutis, B. DeVane, J.C. Oliverio, “Applications of Virtual Environments in Experiential, STEM, and Health Science Education.” *Handbook of Virtual Environments*, Taylor & Francis, 2014, pp. 1055–1071. <https://doi.org/10.1201/b17360>
- [56] A. Kondyli, V. Sisiopiku, L. Zhao, A. Barmpoutis, “Comparative Analysis of Driving Maneuvers Using 3D Body Posture Data.” *Advances in Human Aspects of Transportation: Part II*, 2014, pp. 194–203.
- [55] A. Barmpoutis, “Neural Network Fundamentals,” Ch.7 in *Business Analytics: An Introduction*, Auerbach, 2014, pp. 179–202. <https://doi.org/10.1201/b16246>
- [54] A. Barmpoutis, B.C. Vemuri, “Information Theoretic methods for Diffusion-Weighted MRI analysis.” *Emerging Trends in Visual Computing*, Springer, 2009, pp. 327–346.
- [53] A. Barmpoutis, G.X. Ritter, “Orthonormal Basis Lattice Neural Networks.” *Computational Intelligence based on Lattice Theory*, Springer, 2007, pp. 43–56.

Refereed Journal Articles

- [52] T. Pank, D. Carrascosa, Q. Onikeku, J. Frusco, O. Craig, A. Barmpoutis, “Atunda: A novel Afrogenic dance video database for AI-driven movement classification,” *ACM J. Computing and Cultural Heritage*, 2026 (under review).
- [51] R. Chen, S.Y. Chiu, J.C. DeSimone, et al., A. Barmpoutis, D. Vaillancourt, “Automated Imaging Differentiation for Dementia,” *Neurology Open Access* 2(2), 2026, e000093.
- [50] D.E. Vaillancourt, A. Barmpoutis, S.S. Wu, et al., “Prospective Multicenter Study of Automated Imaging Differentiation for Parkinsonism (AIDP),” *JAMA Neurology* 82(5), 2025, pp. 495–505.

- [49] D.B. Archer et al. (incl. A. Barmpoutis), “Development and validation of the automated imaging differentiation in parkinsonism (AID-P),” *The Lancet Digital Health* 1(5), 2019, pp. e222–e231.
- [48] A. Kondyli, A. Barmpoutis, V.P. Sisiopiku, et al., “A 3D body posture analysis framework during merging and lane-changing maneuvers,” *J. Transportation Safety and Security* 10(5), 2018, pp. 411–428.
- [47] A. Barmpoutis et al., “Assessment of Haptic Interaction for Home-Based Physical Tele-Therapy using Wearable Devices and Depth Sensors,” *Stud. Health Technol. Inform.* 220, 2016, pp. 33–38.
- [46] A. Kondyli, V. Sisiopiku, L. Zhao, A. Barmpoutis, “Computer assisted analysis of drivers' body activity using a range camera,” *IEEE ITS Magazine* 7(3), 2015, pp. 18–28.
<https://doi.org/10.1109/MITS.2015.2439179>
- [45] E. Bozia, A. Barmpoutis, “Life and afterlife of archaeological sources,” *Archeologia e Calcolatori* 26, 2015, pp. 30–32.
- [44] R. Gallen, D. Eastop, E. Bozia, A. Barmpoutis, “Digital imaging: shape-from-shading applied to lace, seals and metal objects,” *ICON J. Conservation* 38(1), 2015, pp. 41–53.
<https://doi.org/10.1080/19455224.2014.999004>
- [43] M. Lame, G. Sarullo, F. Boschetti, M. Dellepiane, E. Bozia, A. Barmpoutis, S. Rosmorduc, “Open-Access Epigraphy,” *LEXIS* 33, 2015, pp. 9–30.
- [42] S. Ray, W. O'Dell, A. Barmpoutis, “Perpendicular Fiber Tracking from Diffusion Weighted MRI for Fiber Bundle Analysis,” *Intl J. Bioinformatics and Research Applications* 10(1), 2014, pp. 75–92.
- [41] A. Barmpoutis, “Tensor Body: Real-time Reconstruction of the Human Body and Avatar Synthesis from RGB-D,” *IEEE Trans. Cybernetics* 43(5), 2013, pp. 1347–1356.
<https://doi.org/10.1109/TCYB.2013.2276430>
- [40] A. Barmpoutis, “Automated Human Avatar Synthesis for Obesity Control using Low-Cost Depth Cameras,” *Stud. Health Technol. Inform.* 184, 2013, pp. 36–42.
- [39] A. Barmpoutis, B.C. Vemuri, “Approximating Symmetric Positive Semidefinite Tensors of Even Order,” *SIAM J. Imaging Sciences* 5(1), 2012, pp. 434–464.
- [38] Y. Weldeselassie, A. Barmpoutis, S. Atkins, “Symmetric positive-definite Cartesian tensor fiber orientation distributions (CT-FOD),” *Medical Image Analysis* 16(6), 2012, pp. 1121–29.
- [37] R. Kumar, A. Barmpoutis, A. Banerjee, B.C. Vemuri, “Non-Lambertian Reflectance Modeling and Shape Recovery for Faces using Anti-Symmetric Tensor Splines,” *IEEE TPAMI* 33(3), 2011, pp. 533–567. <https://doi.org/10.1109/TPAMI.2010.67>
- [36] A. Barmpoutis, E. Bozia, R.S. Wagman, “A novel framework for 3D reconstruction and analysis of ancient inscriptions,” *Machine Vision and Applicat.* 21(6), 2010, pp. 989–998.
<https://doi.org/10.1007/s00138-009-0198-7>

- [35] A. Barmpoutis, M.S. Hwang, D. Howland, J.R. Forder, B.C. Vemuri, “Regular Positive-Definite 4th-order Tensor Field Estimation from DW-MRI,” *NeuroImage* 45(Sup 1), 2009, pp. 153–162.
- [34] A. Barmpoutis, B.C. Vemuri, T.M. Shepherd, J.R. Forder, “Tensor splines for interpolation and approximation of DT-MRI with applications to segmentation of isolated rat hippocampi,” *IEEE TMI* 26(11), 2007, pp. 1537–1546.
- [33] J. Barker, A. Barmpoutis, “Smart Dust: Monte Carlo Simulation of Self-Organized Transport,” *J. Computational Electronics* 3(3–4), 2004, pp. 317–321.

Other Publications

- [32] A. Barmpoutis, “Saving lives with coding: the global impact of an undergraduate project.” *Futurum* 29, 2024, pp. 14–17. <https://doi.org/10.33424/FUTURUM547>
- [31] M. Amin, A. Barmpoutis, M. Berti, E. Bozia, J. Hensel, F. Naether, “Depth map of the Rosetta Stone.” *Humanities Commons*, 2018. <http://doi.org/10.17613/t1e2-0w02>
- [30] A. Barmpoutis, “Digital Epigraphy Toolbox,” *NEH, Humanities Commons*, 2013. <http://doi.org/10.17613/M64W9R>

Selected Conference Abstracts & Seminars

- [29] A. Barmpoutis, O. Craig, J. Frusco, “Panel: Artists as Architects of Future Tech: A Look at the Interdisciplinary Atunda Project,” *A2RU Conference*, Univ. of Memphis, Oct 2026.
- [28] D. Vaillancourt, A. Barmpoutis, R. Chen, et al., “Automated Imaging Differentiation of Parkinsonism (AIDP): A Prospective 21-site Trial within the Parkinson's Study Group,” *Mov Disord.* 2024;39(suppl 1).
- [27] R. Chen, W. Wang, A. Barmpoutis, D. Vaillancourt, “Diffusion MRI and Machine Learning Distinguish Alzheimer's Disease and Dementia with Lewy Bodies,” *Mov Disord.* 2024;39(suppl 1).
- [26] R. Chen, W. Wang, M.S. Okun, A. Barmpoutis, D.E. Vaillancourt, “Impact of Harmonization on Automated Imaging Differentiation of Parkinsonism,” *Neuroscience* 2023, Washington D.C.
- [25] E. Bozia, A. Barmpoutis, “Originals, copies, and digital reproductions: reembodying the written artifact,” *Studying Written Artefacts*, Univ. of Hamburg, Sept 2023.
- [24] D. Vaillancourt, A. Barmpoutis, “AIDP: Automated Imaging Differentiation of Parkinsonism,” *Parkinson's Disease Biomarkers Steering Committee Meeting*, May 2023.
- [23] R. Chen, W. Wang, A. Barmpoutis, D.E. Vaillancourt, “Diffusion MRI and Machine Learning Distinguish Alzheimer's Disease and Dementia with Lewy Bodies,” *Neuroscience* 2022, San Diego.

- [22] E. Bozia, A. Barmpoutis, M. Berti, F. Naether, “Reinscribing the 3rd dimension in epigraphic studies,” 16th Intl Congress of Greek and Latin Epigraphy, Bordeaux, 2022.
- [21] M. Schauder, A. Barmpoutis, D. Vaillancourt, “AIDP - Web-based Automated Imaging Differentiation of Parkinsonism,” Parkinson Study Group 32nd Annual Meeting, 2022.
- [20] C. Conroy, G. Brunetti, P. Freeborn, A. Barmpoutis, E. Fox, “Custom VR System with Real-Time Therapist Interactions,” APTA CSM, Denver, 2020.
- [19] A. Barmpoutis, “Motivating Humanities Students to Learn Coding,” Florida Digital Humanities Consortium, 2019.
- [18] A. Barmpoutis, “Teaching computer programming to humanists using emoticon-like scripting,” HASTAC 2017, Orlando.
- [17] E. Bozia, A. Barmpoutis, “Augmented Reality for Epigraphy: How to bring holograms of inscriptions to your classrooms,” CIEGL17, Vienna, 2017.
- [16] A. Kondyli, A. Barmpoutis, V. Sisiopiku, “Safety-Related Analysis of the 3D Driver Body Posture Using Naturalistic Data,” TRB Annual Meeting, 2016.
- [15] A. Barmpoutis, M. Suvajdzic, L. Anthony, W. Eugene, “Kinesthetic Experiential Learning Environments for Enhancing Elementary Math Education,” NSEE 2015.
- [14] E. Bozia, A. Barmpoutis, “The significance of 3D models of ektypa for automatic analysis of lettering techniques,” EAA2015, Glasgow.
- [13] E. Schaefer, A. Barmpoutis, E. Tripp, S.L. Quincy, “Teaching Carolingian Chant with Interactive Software,” SoTL Conference, Savannah, 2015.
- [12] M. Li, Y. Chen, A. Barmpoutis, “Collaborative Learning in Video Games to Enhance Learning Efficiency,” ASEE Annual Conference, 2015.
- [11] A. Kondyli, A. Barmpoutis, V. Sisiopiku, “Investigation of the effect of drivers' body motion on traffic safety,” UTC Conference for the Southeast Region, 2014.
- [10] and 10 additional refereed abstracts/seminars (2003–2012)— full list available on my interactive portfolio website at: <https://digitalworlds.github.io/angelos>

INVITED TALKS AND KEYNOTES

- Keynote on technology transfer from academia to industry, Nucleate Florida's AI in Biotech, UF Innovate, April 2, 2026.
- Seminar Series, University of Chicago, March 27, 2026.
- “Investigating human behavior using passive haptics & motion tracking in extended reality environments,” Dept. of Applied Physiology & Kinesiology, UF, February 22, 2024.
- “From the chisel to the Metaverse: The Digital Epigraphy and Archaeology Project,” Ghent University, Belgium, March 21, 2023.

- Keynote address at the College of the Arts Graduation Ceremony, University of Florida, 2022.
- “The Digital Epigraphy Toolbox 2.0,” Digital Classics Seminar Series, Berlin-Brandenburg Academy of Sciences and Humanities, February 15, 2022.
- “Research Applications of Infrared Depth Sensors,” Suleyman Demirel University, Turkey, March 30, 2018.
- “Working with Virtual Reality: International Perspectives,” HumLab, University of Umeå, Sweden, June 21, 2017.
- “Digital Preservation, Reconstruction, and Analysis of Fragmentary Archaeological Findings,” American Academy in Rome, New York, February 25, 2016.
- “Human Body and Gesture analysis for on-line tele-health applications,” Old Dominion University, April 28, 2015.
- “Classical Studies Revisited: Creating the Digital Cast of the Ancient World,” Mary Moser Memorial Lecture, Dickinson College, March 2, 2015.
- “Representing written objects in 3D,” Open Philology Seminar, University of Leipzig, July 16, 2014.
- “The Digital Epigraphy Project,” Maison de l’Orient et de la Méditerranée, University of Lyon, June 11, 2014.
- “The First On-line 3D Epigraphic Library,” Center for Digital Humanities, University of Leipzig, December 19, 2012.
- “Tensor Field Analysis for Image Processing Applications,” Johns Hopkins University, March 8, 2011.
- and 6 additional invited talks (2009–2010) at UNC Chapel Hill, GE Research, Stanford Research Institute, Rutgers, and UCLA.

SELECTED AWARDS AND HONORS

- Provost’s Commendation for Outstanding Teaching Evaluations, 2026
- FDA DeNovo Classification granted for a collaborative project with health sciences, 2026.
- Recipient of the Innov8r plate at the third annual Standing InnOvation Showcase, 2025
- Presidential Appointee – University Taskforce, 2024
- Sigma Xi – Scientific Research Honor Society, Elected Full Member, 2024
- UF Research Foundation Professor, 2020–2023
- Best Paper Award, 2023 IEEE ISEC, 2nd place
- Dean’s appointee as the faculty speaker at the College of the Arts Graduation Ceremony, 2022.
- Awarded Sabbatical Leave, 2021 (Spring and Fall)
- Anderson Scholar Faculty Honoree, 2019

- Undergraduate Teacher of the Year Award, College of the Arts, UF, 2017
- Fellow of the American Academy in Rome, Finalist, Rome Prize – Historic Preservation and Conservation, 2016
- Merit Award and Best Paper Award Finalist, IEEE ICCVE Conference, 2014
- e-Humanities award, 2nd place, University of Leipzig, 2012
- Outstanding Academic Achievement Award, University of Florida, 2008
- MICCAI Young Scientist Award Finalist, 2008
- Bursary, International Epigraphic Conference, University of Oxford, 2007
- Alumni Fellowship, University of Florida, 2004–2008

TEACHING AND CURRICULUM DEVELOPMENT

Developed and taught the following graduate and undergraduate courses at the University of Florida since 2010, spanning immersive environments, game-engine development, AI in the arts, interaction design, and interdisciplinary research methods:

- Game Engine Development (students build their own game engines from the ground up; course includes advanced shader techniques) —DIG4930. Syllabus available at: <https://digitalworlds.github.io/angelos>
- Interaction Design — DIG6126C
- Wearables and Mobile App Development (hands on coding for artists; students build apps for phones, smart watches and VR headsets)— DIG4634
- Interdisciplinary Research Seminar — DIG6840C
- Production of Immersive Environments (hands on design with Unity and Unreal) — DIG4540C
- Entertainment Technology — DIG6050C
- Movement, Media, and Machines (body tracking methods for real-time applications)— DIG6744C
- Protocols for Multimedia Interfaces — DIG6751C
- Interactive Storytelling — DIG6027C / DIG3433
- Neural Networks — CAP6615
- Digital Arts and Science (DAS) Design and Production Studio / Intro to DAS — DIG2931C
- Advanced Programming Fundamentals — COP3504
- Undergraduate Research in Digital Arts and Sciences — DIG4917
- Independent Study — DIG6906

Curriculum Leadership

- **Chair, Interactive and Emerging Media curricular area** (2023–present) — leads curriculum planning across faculty teams for AI, virtual production, visualization, and interactive media
- **Dean's appointee as the Arts representative** on University's AI Curriculum Committee (2021)
- Authored 50% of the original curriculum for the **Bachelor of Arts in Digital Arts and Sciences** (500+ students annually)
- Developed (35%) the **Master of Digital Arts and Sciences** graduate curriculum

STUDENT MENTORSHIP

- Served on 60 graduate student committees (Ph.D.: 17, M.A.: 44)
- Mentor, Push4it, Office of Academic Affairs, 2022-2026
- Mentor, AP Research Papers on Virtual Reality in Schools, Suncoast Community High School, 2022-2024
- Advisor, First Lego League robotics team, Milwee Middle School, 2023
- Mentor, University Scholars Program, 2016–2017, 2018–2019, 2023–2024
- Mentor, Integrated Product and Process Design Program, 2014–2015, 2017–2018, 2018–2019, 2019–2020
- Mentor, University Minority Mentor Program, 2015–2016

Student Placement

Students have gone on to careers at Electronic Arts, Activision Blizzard, Epic Games, Meta, Microsoft, and in academia and entrepreneurial ventures

A gallery of representative student works produced in my lab is available in my interactive portfolio at: <https://digitalworlds.github.io/angelos>

PROFESSIONAL AND UNIVERSITY SERVICE

Journal & Publisher Reviewer

Elsevier (book proposals); CAD (Computer-Aided Design); CAMWA; CBM; CVIU; IEEE Trans. Cybernetics; IEEE Trans. Image Processing; IEEE Trans. Intelligent Transportation Systems; IEEE Trans. Medical Imaging; IEEE Trans. Pattern Analysis and Machine Intelligence; IJCARS; Information (MDPI); Intl J. Machine Learning and Cybernetics; iScience; JEMWA; JMLC; JMIV; MEDIA; Molecular Imaging; Nature Communications Medicine; NeuroImage; Pattern Recognition; PNAS; Sensors (MDPI); SIIMS; Journal of Safety Science and Resilience; Virtual Reality (Springer).

Conference Service (Selected)

- Program Board Member, International Conference on Virtual, Augmented, and Mixed Reality, 2025, 2026, 2027
- Session Chair, “Enhancing User Perception, Presence, and Comfort in VR,” HCII, Washington D.C., 2024
- Program Board Member, HCI International Conference, 2023, 2024
- External grant reviewer, Czech Science Foundation, 2021
- Session Chair, “New Virtualities IV,” HCII, Copenhagen, 2020
- Session Chair, HFES III, AHFE, Los Angeles, 2017
- Session Chair, “Developing Novel Virtual Environments,” HCII, Vancouver, 2017
- Chair, Organizing Committee, Drivers' Motion Depth Database Track, 3D Shape Retrieval Contest, 2015
- Program Committee, International Conference on Computer Vision Theory and Applications, 2015, 2017, 2025

University Service (Selected)

- Coordinator of Research and Technology, Digital Worlds Institute (2010–present)
- Chair, Interactive and Emerging Media curricular area (2024-present)
- Chair, University Library Committee (2020–2021); Co-Chair (2018–2020)
- Chair, Multiple Faculty Search Committees, Assistant/Associate Professor, Digital Arts and Sciences
- Chair, search committees for Interactive Media Programmer and Interaction Designer
- Mentor, Junior Faculty Tenure & Promotion Mentorship, College of the Arts (2018-present)
- Member, AI and the Arts Working Group, College of the Arts (2022–present)
- Member, Tenure and Promotion Committee, College of the Arts (2023–present)
- Member, Search Committee for Director of the Digital Worlds Institute (2025)
- Member, Search Committee for Dean of the College of the Arts (2024–2025)
- Member, UF Data Science Committee (2022–2023)
- Member, UF AI Research Working Group (2020–2021)
- Member, graduate admissions committee, Digital Worlds Institute (2011–present)

TECHNICAL SKILLS AND CERTIFICATES

Expert level: Unity3D, Unreal, Blender, OpenGL ES3, GLSL, JavaScript, Java, Python, C, C++, C#, Shell, Android Studio, MATLAB, PHP, SQL, HTML5

- I-Corps@NCATS Training, University of Miami CTSI, 2021
- NIH AAP (Applicant Assistance Program) Training, Eva Garland Consulting, 2021
- Six Sigma White Belt Certification, Florida Light & Power / NextEra Energy, 2019

PROFESSIONAL MEMBERSHIPS

IEEE • ACM (Lifetime Member) • Sigma Xi (Elected Full Member)