

ROBERT MITCHELL PARRY

Computer Science Department
Appalachian State University
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RESEARCH INTERESTS

Signal & Image Processing • Machine Learning • Computer Graphics & Visualization
with Applications in Music, Biology, Chemistry, Education, and Humanities

EDUCATION

Ph.D. in Computer Science, Dec. 2007
Georgia Institute of Technology, Atlanta, GA
Dissertation Title: Separation and Analysis of Multichannel Signals
Dissertation Advisor: Professor Irfan Essa

M.S. in Computer Science, May 2006
Georgia Institute of Technology, Atlanta, GA
Specialization: Graphics and Visualization

B.S. in Computer Science with High Distinction, May 2000
University of Virginia, Charlottesville, VA
Minor: Electrical Engineering
Thesis: Circuiting Helms Theater Using Simulated Annealing

EXPERIENCE

Associate Professor, Computer Science Department, Appalachian State University
2018 – present
Teaching and mentoring students on the mathematical, algorithmic, and practical aspects of data science. [C29, C30]

Assistant Professor, Computer Science Department, Appalachian State University
2012 – 2018
Collaborated on multidisciplinary projects spanning the arts & sciences [J7, J8, J9, J10, J11, J12, C23, C24, C25, C26, C27, C28, T4, T5, T6, O6, O7, O8].

Postdoctoral Fellow, Department of Biomedical Engineering, Georgia Tech and Emory University
2007 – 2012, *Advisor: Professor May D. Wang*
Worked in biomedical informatics and collaborating with researchers in biomedical engineering, electrical engineering, chemistry, and medicine on projects including imaging, visualization, biomarker discovery and quality control [J1, J2, J3, J4, J5, J6, C15, C16, C17, C18, C19, C20, C21, C22, O3, O4, O5].

Doctoral Student, College of Computing/GVU Center, Georgia Institute of Technology

2003 – 2007, *Advisor: Professor Irfan Essa*

Conducted research on information retrieval, signal processing, pattern recognition, and their application to music and audio analysis [C5, C6, C9, C10, C11, C12, C13, C14, T3].

2004 – 2005, *Advisor: Professor Gil Weinberg*

Contributed computational rhythmic analysis for a robotic percussionist [C7, C8, O2].

2001 – 2002, *Advisor: Professor Mark Guzdial*

Explored music visualization, computer music and enhanced the music facilities in Squeak, an open-source implementation of Smalltalk-80 [T2].

2000 – 2001, *Advisor: Dr. William Ribarsky*

Worked to incorporate real-time weather and high-resolution 3D city facades into a 3D interactive visualization of the earth (similar to Google Earth) [C1, C2, C3, C4, O1].

PUBLICATIONS

*IF = Impact Factor; citations from Google Scholar 5/14/2021.

JOURNAL ARTICLES (REFEREED)

- J12 Sarah Beth Hopton and R. Mitchell Parry. Saving the Sea, Socially: Measuring the Relationship between Content and Gesture on Facebook. *Communication Design Quarterly Review*, 4(2B):32–43, 2017
- J11 Martin R.L. Paine, Jaeyeon Kim, Rachel V. Bennett, R. Mitchell Parry, David A. Gaul, May D. Wang, Martin M. Matzuk, and Facundo M. Fernández. Whole Reproductive System Non-Negative Matrix Factorization Mass Spectrometry Imaging of an Early-Stage Ovarian Cancer Mouse Model. *PLoS ONE*, 11(5):e0154837, 2016. 2015 IF: 3.1, **20 citations**
- J10 Chanchala Kaddi, R. Mitchell Parry, and May D. Wang. Multivariate Hypergeometric Similarity Measure. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 10(6):1505–1516, 2013. (Mentoring by Parry, extension of ACM-BCB’12 paper), 2011 IF: 1.5, **13 citations**
- J9 R. Mitchell Parry, Asiri Galhena, Chaminda Gamage, Rachel V. Bennett, May D. Wang, and Facundo M. Fernández. OmniSpect: An Open MATLAB-based Tool for Visualization and Analysis of Matrix-assisted Laser Desorption/Ionization and Desorption Electrospray Ionization Mass Spectrometry Images. *Journal of The American Society for Mass Spectrometry*, 24(4):646–649, 2013. (Principal research and authorship by Parry), 2011 IF: 4.0, **60 citations**
- J8 R. Mitchell Parry and May D. Wang. A Fast Least-squares Algorithm for Population Inference. *BMC Bioinformatics*, 14:28, 2013. (Principal research and authorship by Parry), 2011 IF: 2.8, **5 citations**
- J7 Tiffany D. Andras, Troy S. Alexander, Asiri Galhena, R. Mitchell Parry, Facundo M. Fernández, Julia Kubanek, May D. Wang, and Mark E. Hay. Seaweed Allelopathy Against Coral: Surface Distribution of Seaweed Secondary Metabolites by Imaging Mass Spectrometry. *Journal of Chemical Ecology*, 38(10):1203–1214, 2012. (Research and journal cover image contributed by Parry), 2011 IF: 2.7, **64 citations**
- J6 R. Mitchell Parry, John H. Phan, and May D. Wang. Win Percentage: A Novel Measure for Assessing the Suitability of Machine Classifiers for Biological Problems. *BMC Bioinformatics*, 13(Suppl 3):S7, 2012. (Principal research and authorship by Parry, extension of ACM-BCB’11 paper), 2011 IF: 2.8, **2 citations**
- J5 Richard A. Moffitt, Qiqin Yin-Goen, Todd H. Stokes, R. Mitchell Parry, James H. Torrance, John H. Phan, Andrew N. Young, and May D. Wang. caCORRECT2: Improving Accuracy and Reliability of Microarray Data in the Presence of Artifacts. *BMC Bioinformatics*, 12(8):383, 2011. (Research contribution by Parry), 2011 IF: 2.8, **15 citations**

- J4 R. Mitchell Parry*, Wendell Jones*, Todd H. Stokes*, John H. Phan, Richard A. Moffitt, Hong Fang, Leming Shi, André Oberthuer, Matthias Fischer, Weida Tong, and May D. Wang. k-Nearest neighbor models for microarray gene expression analysis and clinical outcome prediction. *The Pharmacogenomics Journal*, 10(4):292–309, 2010. (*Equal contributing author, also appears in *Nature Biotechnology*, 28(10s): S62-S79, 2010), 2010 IF: 4.3, **104 citations**
- J3 The MAQC Consortium. The MicroArray Quality Control (MAQC)-II study of common practices for the development and validation of microarray-based predictive models. *Nature Biotechnology*, 28(8):827–838, 2010. (One of 202 participating authors, also appears in *Nature Biotechnology*, 28(10s): S5-S16, 2010), 2010 IF: 31.1, **736 citations**
- J2 Leonard Nyadong, Glenn A. Harris, Stéphane Balayssac, Asiri S. Galhena, Myriam Malet-Martino, Robert Martino, R. Mitchell Parry, May Dongmei Wang, Facundo M. Fernández, and Véronique Gilard. Combining Two-Dimensional Diffusion-Ordered Nuclear Magnetic Resonance Spectroscopy, Imaging Desorption Electrospray Ionization Mass Spectrometry, and Direct Analysis in Real-Time Mass Spectrometry for the Integral Investigation of Counterfeit Pharmaceuticals. *Analytical Chemistry*, 81(12):4803–4812, 2009. (Research contribution by Parry), 2009 IF: 5.2, **109 citations**
- J1 Amy L. Lane, Leonard Nyadong, Asiri Galhena, Tonya L. Shearer, E. Page Stout, R. Mitchell Parry, Mark Kwasnik, May D. Wang, Mark E. Hay, Facundo M. Fernández, and Julia Kubanek. Desorption electrospray ionization mass spectrometry (DESI-MS) reveals surface-mediated antifungal chemical defense of a tropical seaweed. *Proc Natl Acad Sci USA*, 106(18):7314–7319, 2009. (Research contribution by Parry), 2009 IF: 9.4, **228 citations**

CONFERENCE PAPERS (REFEREED)

- C30 Luke Craig and R. Mitchell Parry. A Real-time Audio Effect Plug-in Inspired by the Processes of Traditional Indonesian Gamelan Music. In *Proceedings of the International Conference on Digital Audio Effects*. Birmingham, UK, September 2019. **1 citation**
- C29 Luke Craig, Rahman Tashakkori, and R. Mitchell Parry. BeePhon: A Web-Application for Beehive Audio Exploration. In *Proceedings of IEEE SoutheastCon*. Huntsville, AL, April 2019
- C28 Sarah-Beth Hopton and R. Mitchell Parry. Measuring the validity of algorithms to automatically categorize Facebook content. In *Proceedings of the ACM International Conference on the Design of Communication (SIGDOC)*. Silver Spring, MD, September 2016
- C27 Timothy J. Jassmann, Rahman Tashakkori, and R. Mitchell Parry. Leaf Classification Utilizing a Convolutional Neural Network. In *Proceedings of IEEE SoutheastCon*. Fort Lauderdale, FL, April 2015. **20 citations**
- C26 David J. Kale, Rahman Tashakkori, and R. Mitchell Parry. Automated Beehive Surveillance using Computer Vision. In *Proceedings of IEEE SoutheastCon*. Fort Lauderdale, FL, April 2015. **9 citations**
- C25 R. Mitchell Parry. A Nearest Neighbors Analysis of Student Academic Performance in Computer Science. In *Proceedings of ACM Technical Symposium on Computer Science Education (SIGCSE)*, page 685. Kansas City, MO, March 2015. **44% acceptance**
- C24 Rahman Tashakkori, R. Mitchell Parry, Adam Benoit, Rebecca A. Cooper, Jessica L. Jenkins, and Nicholas T. Westveer. Research Experience for Teachers: Data Analysis & Mining, Visualization, and Image Processing. In *Proceedings of ACM Technical Symposium on Computer Science Education (SIGCSE)*, pages 193–198. Atlanta, GA, March 2014. **39% acceptance, 4 citations**
- C23 Chanchala Kaddi, R. Mitchell Parry, and May D. Wang. Multivariate Hypergeometric Similarity Measure. In *Proceedings of ACM Conference on Bioinformatics, Computational Biology and Biomedicine (ACM-BCB)*, pages 234–241. Orlando, FL, October 2012. (Mentoring by Parry, regular paper presentation, shorter version of ACM/IEEE TCBB’13 paper), **21% acceptance, 3 citations**

- C22 Chanchala Kaddi, R. Mitchell Parry, and May D. Wang. Hypergeometric Similarity Measure for Spatial Analysis in Tissue Imaging Mass Spectrometry. In *Proceedings of IEEE International Conference on Bioinformatics and Biomedicine (BIBM)*, pages 604–607. Atlanta, GA, November 2011. (Mentoring by Parry, short paper presentation), **39% acceptance, 9 citations**
- C21 S. Hussain Raza, R. Mitchell Parry, Richard Moffitt, Andrew Young, and May D. Wang. An Analysis of Scale and Rotation Invariance in the Bag-of-Features Method for Histopathological Image Classification. In *Proceedings of International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI)*, volume 6893 of *Lecture Notes in Computer Science (LNCS)*, pages 66–74. Springer, Toronto, September 2011. (Mentoring by Parry, poster presentation), **31% acceptance, 24 citations**
- C20 R. Mitchell Parry, John H. Phan, and May D. Wang. Win Percentage: A Novel Measure for Assessing the Suitability of Machine Classifiers for Biological Problems. In *Proceedings of ACM Conference on Bioinformatics, Computational Biology and Biomedicine (ACM-BCB)*, pages 29–38. Chicago, August 2011. (Principal research and authorship by Parry, oral presentation, shorter version of BMC Bioinformatics’12 paper), **19% acceptance**
- C19 S. Hussain Raza, R. Mitchell Parry, Yachna Sharma, Qaiser Chaudry, Richard A. Moffitt, Andrew N. Young, and May D. Wang. Automated Classification of Renal Cell Carcinoma Subtypes Using Bag-of-Features. In *Proceedings of International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS)*, pages 6749–6752. Buenos Aires, Argentina, August 2010. (Mentoring by Parry, oral presentation), **28% acceptance, 18 citations**
- C18 R. Mitchell Parry, Asiri S. Galhena, Facundo M. Fernández, and May D. Wang. Deblurring Molecular Images Using Desorption Electrospray Ionization Mass Spectrometry. In *Proceedings of International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS)*, pages 6731–6734. Minneapolis, MN, September 2009. (Invited paper, Principal authorship and research by Parry), **2 citations**
- C17 Teresa H. Sanders, Todd H. Stokes, Richard A. Moffitt, Qaiser Chaudry, R. Mitchell Parry, and May D. Wang. Development of an Automatic Quantification Method for Cancer Tissue Microarray Study. In *Proceedings of International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS)*, pages 3665–3668. Minneapolis, MN, September 2009. (Mentoring by Parry, poster presentation), **67% acceptance, 5 citations**
- C16 Peter W. Siy, Richard A. Moffitt, R. Mitchell Parry, Yanfeng Chen, Ying Liu, M. Cameron Sullards, Jr. Alfred H. Merrill, and May D. Wang. Matrix Factorization Techniques for Analysis of Imaging Mass Spectrometry Data. In *Proceedings of IEEE International Conference on Bioinformatics and Bioengineering (BIBE)*. Athens, Greece, October 2008. (Longer version of [A7], Mentoring and principal research direction by Parry, oral presentation), **53% acceptance, 25 citations**
- C15 Matthew Caldwell, Richard A. Moffitt, Jian Liu, R. Mitchell Parry, Yachna Sharma, and May D. Wang. Simple Quantification of Multiplexed Quantum Dot Staining in Clinical Tissue Samples. In *Proceedings of International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS)*, pages 1907–1910. Vancouver, BC, August 2008. (Mentoring by Parry, oral presentation), **33% acceptance, 22 citations**
- C14 R. Mitchell Parry and Irfan Essa. Phase-aware Non-negative Spectrogram Factorization. In *Independent Component Analysis and Signal Separation (ICA)*, volume 4666 of *Lecture Notes in Computer Science (LNCS)*, pages 536–543. Springer, London, September 2007. (Principal authorship and research by Parry, poster presentation), **70% acceptance, 23 citations**
- C13 R. Mitchell Parry and Irfan Essa. Incorporating Phase Information for Source Separation via Spectrogram Factorization. In *Proceedings of IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, volume 2, pages 661–664. Honolulu, Hawaii, April 2007. (Principal authorship and research by Parry, poster presentation, longer version of work in NIPS Workshop’06), **46% acceptance, 42 citations**

- C12 R. Mitchell Parry and Irfan Essa. Spectrogram Factorization Using Phase Information. In *Neural Information Processing Systems: Workshop on Advances in Models for Acoustic Processing*. Whistler, Canada, December 2006. (Shorter version of ICASSP'07 paper, Principal authorship and research by Parry, poster presentation)
- C11 R. Mitchell Parry and Irfan Essa. Source Detection Using Repetitive Structure. In *Proceedings of IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, volume 4, pages 1093–1096. Toulouse, France, May 2006. (Principal authorship and research by Parry, poster presentation), **48% acceptance, 1 citation**
- C10 R. Mitchell Parry and Irfan Essa. Estimating the Spatial Position of Spectral Components in Audio. In *Independent Component Analysis and Blind Signal Separation (ICA)*, volume 3889 of *Lecture Notes in Computer Science (LNCS)*, pages 666–673. Springer, Charleston, SC, March 2006. (Principal authorship and research by Parry, oral presentation), **25% acceptance, 39 citations**
- C9 R. Mitchell Parry and Irfan Essa. Blind Source Separation Using Repetitive Structure. In *Proceedings of International Conference on Digital Audio Effects (DAFX)*, pages 143–148. Madrid, Spain, September 2005. (Principal authorship and research by Parry, oral presentation), **56% acceptance, 4 citations**
- C8 Gil Weinberg, Scott Driscoll, and R. Mitchell Parry. Haile - An Interactive Robotic Percussionist. In *Proceedings of International Computer Music Conference (ICMC)*. Barcelona, Spain, September 2005. (1/4 authorship and research by Parry), **68% acceptance, 23 citations**
- C7 Gil Weinberg, Scott Driscoll, and R. Mitchell Parry. Musical Interactions with a Perceptual Robotic Percussionist. In *IEEE International Workshop on Robots and Human Interactive Communication (ROMAN)*, pages 456–461. Nashville, TN, August 2005. (1/4 authorship and research by Parry, presented as a talk), **63% acceptance, 38 citations**
- C6 R. Mitchell Parry and Irfan Essa. Feature Weighting for Segmentation. In *Proceedings of the International Conference on Music Information Retrieval (ISMIR)*, pages 116–119. Barcelona, Spain, October 2004. (Principal authorship and research by Parry, presented as a poster), **90% acceptance, 17 citations**
- C5 R. Mitchell Parry and Irfan Essa. Rhythmic Similarity through Elaboration. In *Proceedings of the International Conference on Music Information Retrieval (ISMIR)*, pages 251–252. Baltimore, MD, October 2003. (Principal authorship and research by Parry, presented as a poster), **68% acceptance, 7 citations**
- C4 R. Mitchell Parry, William Ribarsky, Christopher Shaw, and Nickolas Faust. Organization and Simplification of High-Resolution 3D City Facades. In *Proceedings of SPIE: Aerosense*, volume 4744. 2002. (Also Georgia Tech GVVU Center Technical Report GIT-GVVU-02-14, 1/4 authorship and research by Parry), **4 citations**
- C3 Christopher D. Shaw, Frank T. Jiang, R. Mitchell Parry, Beth Plale, Anthony A. Wasilewski, William Ribarsky, and Nickolas L. Faust. Real-Time Weather Data on Terrain. In *Proceedings of SPIE: Aerosense*, volume 4368. Orlando, FL, April 2001. (Research contribution by Parry), **9 citations**
- C2 R. Mitchell Parry, Brendan Hannigan, William Ribarsky, Christopher D. Shaw, and Nickolas L. Faust. Hierarchical Storage and Visualization of Real-time 3D Data. In *Proceedings of SPIE: Aerosense*, volume 4368. Orlando, FL, April 2001. (Authorship and research contribution by Parry), **5 citations**
- C1 Tian-yue Jiang, William Ribarsky, Tony Wasilewski, Nickolas Faust, Brendan Hannigan, and R. Mitchell Parry. Acquisition and Display of Real-time Atmospheric Data on Terrain. In *Proceedings of Joint Eurographics-IEEE Symposium on Visualization (VisSym)*, Data Visualization 2001, pages 15–24. SpringerComputerScience, 2001. (Research contribution by Parry), **15 citations**

GRANTS AND EXTERNAL FUNDING APPLICATIONS

- G2 National Science Foundation: S-STEM. The Appalachian High Achievers in STEM (Senior/Key Participant with Rahman Tashakkori, Jennifer Cecile, Andrew Heckert, Dru Henson, Brooke Hester, Jennifer McGee, Cynthia Norris, Katrina Palmer, Neva Specht, and James Street), Five years (\$999,984), Award Number: 1742282, 2018–2023.
- G1 National Science Foundation. RET in Engineering and Computer Science Site: Data Analysis and Mining, Image Processing and Visualization at Appalachian State University (co-PI with Rahman Tashakkori). Three years (\$499,702), Award Number: 1301089, 2012–2015

TEACHING

Associate Professor, Appalachian State University, Boone, NC

CS 2435: Intro to Scientific Programming (in Python: Fall'18, Fall'19)
CS 3435: Data Collection and Visualization (in Python: Spr'19, Spr'20, Spr'21)
CS 3750: Applied Neural Networks (in Python: Fall'18, Sum'19)
CS 4465/5465: Computer Graphics (in Java: Spr'20)
CS 4740/5740: Digital Image Processing (in Python: Spr'19)
CS 4755: Applied Machine Learning (in Python: Fall'19)
CS 4800: Capstone Project (Fall'20, Spr'21)
CS 5100: Graduate Seminar (Spr'19)
CS 5245: Data Programming (interdisciplinary in Python: Spr'20, Fall'20)
CS 5440: AI (Deep Learning) (in Python: Fall'19)
CS 5710: Data Mining for Scientific Data (in Python: Fall'18, Spr'21)

Assistant Professor, Appalachian State University, Boone, NC

CS 1440: Computer Science I (in Java: Fall'12, Spr'13)
CS 1445: Intro to Programming with Interdisc. Apps. (in Matlab: Fa'14, Fa'15, Fa'16, Fa'17)
CS 2440: Computer Science II (in Java: Spr'13, Fall'13, Spr'14)
CS 2440: Computer Science II Labs (in Java: Spr'14 – Spr'17)
CS 3535: Music Informatics (in Python: Spr'15)
CS 3546: Research Experience in Data Science (Sum'16)
CS 3547: Machine Learning (Sum'17, Sum'18)
CS 4440/5440: Artificial Intelligence (in Java: Spr'14, in Python: Spr'16)
CS 4465/5465: Computer Graphics (in Java: Fall'13, Spr'18)
CS 4740/5740: Digital Image Processing (in Matlab: Fall'14)
CS 4800: Capstone Project (Spr'14 (cotaught), Spr'16, Fall'16, Spr'17)
CS 5100: Graduate Seminar (Spr'15, Spr'16, Spr'17, Spr'18)
CS 5245: Data Programming (interdisciplinary in Python: Fall'15, Fall'17)
CS 5440: Artificial Intelligence (in any language: Fall'17)
CS 5710: Data Mining for Scientific Data (Fall'12, Fall'16)
CS 5720: Data Visualization (Spr'18)
CS 5800: Masters Project (Spr'13, Spr'15, Spr'17)
CS 5998: Thesis Preparation (Sum'16 (cotaught))
CS 5999: Thesis (Spr'17)
NSF Research Experience for Teachers Six-week Summer Program (Sum'13, Sum'14, Sum'15)
Summer Ventures in Science and Math (Sum'15)

Instructor, Georgia Institute of Technology, Atlanta, GA

CS 3451: Computer Graphics (Sum'12)

Problem-based Learning Facilitator, Georgia Institute of Technology, Atlanta, GA

Biomedical Engr. 1300: Problems in Biomedical Engineering I (Spr'09, Spr'10, Fall'10, Fall'11, Spr'12)

Facilitated a group of six to eight first- or second-year undergraduates twice weekly while they worked on biomedical engineering problems using problem-based learning methodologies.

Guest Instructor, Georgia Institute of Technology, Atlanta, GA

Biomedical Engr. 1300: Problems in Biomedical Engineering I (Fall'10, Fall'11)

Developed and presented a lecture titled *Design and Analysis of Experiments* based on existing lecture slides.

Music 3500: Introduction to Synthesized Computer Music (Spr'04, Fall'04)

Developed and presented two lectures titled *Pitch and Rhythm Recognition* and *Spectrum Analysis* based on The Computer Music Tutorial by Curtis Roads. Led Max/MSP tutorial.

Graduate Teaching Assistant, Georgia Institute of Technology, Atlanta, GA

CS 4451: Computer Graphics (Spr'02, Sum'02, Fall'02)

Coauthored assignments, developed grading criteria, and evaluated open-ended projects. Developed and presented an introductory *OpenGL/GLUT* lecture based on existing slides. Provided individual student assistance during office hours for approximately 40 students per semester.

Teaching Assistant, University of Virginia, Charlottesville, VA

CS 101: Introduction to Computer Science (Spr'98, Spr'00)

Provided one-on-one C++ programming help to students in office hours and labs.

CS 201: Software Development Methods (Fall'98)

Helped manage lab sessions and graded object-oriented programming assignments.

MENTORING

- M23 Nathaniel Hernandez. *Blockchain Elections: Smart Contract Electoral System Design and Implementation*. Master's thesis, Computer Science, Appalachian State University, Boone, NC, May 2021
- M22 Christopher Campell. *Automated Detection of Herbarium Specimens via Transfer Learning in Convolutional Neural Networks*. Master's thesis, Computer Science, Appalachian State University, Boone, NC, December 2019
- M21 Zachary Andrews. *Comparing Predictive Models for English Premiere League Games*. Master's thesis, Computer Science, Appalachian State University, Boone, NC, May 2019
- M20 Christopher Smith. *Understanding Computer Science Academic Performance using Principal Components Analysis*. Master's thesis, Computer Science, Appalachian State University, Boone, NC, December 2017
- M19 Michael Crawford. *Automated Collectcion of Honey Bee Data using the Raspberry Pi*. Master's thesis, Computer Science, Appalachian State University, Boone, NC, August 2017
- M18 Stephen Bunn. *Applying Package Management to Mod Installations*. Master's thesis, Computer Science, Appalachian State University, Boone, NC, May 2017
- M17 Jesse David Sykes. *Automated Harmonic Analysis on Common Practice Music*. Undergraduate Honor's Thesis, Computer Science, Appalachian State University, Boone, NC, May 2017
- M16 Kevin Alvarez. Modeling eBook Sales Rank in the Amazon Marketplace: a Machine Learning Approach. In *National Conference on Undergraduate Research*. Memphis, TN, April 2017. (Oral presentation)
- M15 Chris Campell. Applications of Predictive Modeling on the Appalachian Trail. In *National Conference on Undergraduate Research*. Memphis, TN, April 2017. (Oral presentation)

- M14 Haihoua Yang. *FEAT: A Facebook Extraction and Analysis Toolkit*. Master's thesis, Computer Science, Appalachian State University, Boone, NC, December 2016
- M13 Dakota Murray. *Single Channel Source Separation Applied to Beehive Audio*. Undergraduate Honor's Thesis, Computer Science, Appalachian State University, Boone, NC, May 2016
- M12 Dakota Murray. Applying and Evaluating Signal Separation Techniques to Beehive Audio. In *National Conference on Undergraduate Research*. Asheville, NC, April 2016. (Oral presentation)
- M11 Timothy Jassmann. *Mobile Leaf Classification Application Utilizing a Convolutional Neural Network*. Master's thesis, Computer Science, Appalachian State University, Boone, NC, August 2015
- M10 David Kale. *Automated Beehive Surveillance using Computer Vision*. Master's thesis, Computer Science, Appalachian State University, Boone, NC, August 2015
- M9 Tobin MacDermott. *Streamflow Modeling*. Undergraduate Honor's Thesis, Computer Science, Appalachian State University, Boone, NC, May 2015
- M8 Brandon Connes. Social Media Data Mining. In *Department of Computer Science Celebration of Student Learning*. Boone, NC, April 2015. (Oral presentation)
- M7 Huy Tu. Infinite Jukebox Transition Detection Game. In *Department of Computer Science Celebration of Student Learning*. Boone, NC, April 2015. (Lightning talk and demo)
- M6 Jacob Mulford. Tempo Shifting and Song Mixing Using Echonest. In *Department of Computer Science Celebration of Student Learning*. Boone, NC, April 2015. (Lightning talk and demo)
- M5 Luke Stack. Infinite Spotify Player. In *Department of Computer Science Celebration of Student Learning*. Boone, NC, April 2015. (Lightning talk and demo)
- M4 Luke Stack. Applying Computer Science to Create Music Mash-ups. In *Appalachian State Celebration of Student Research and Creative Endeavors*. Boone, NC, March 2015. (Oral presentation)
- M3 Sina Tashakkori. A Preliminary Study to Predict Student Course Performance using Principal Component Analysis and Grade Data. In *Appalachian State Celebration of Student Research and Creative Endeavors*. Boone, NC, March 2015. (Poster presentation)
- M2 Dakota Murray. Beehive Audio Source Separation. In *State of North Carolina Undergraduate Research & Creativity Symposium*. Raleigh, NC, November 2014. (Oral presentation)
- M1 Dakota Murray. Using Computational Tools to Understand the Sounds of a Bee Hive. In *National Conference on Undergraduate Research*. Lexington, KY, April 2014. (Oral presentation)

AWARDS AND HONORS

Named “One of the Most Helpful Faculty and Staff,” Office of Student Success, Appalachian State University, 2019 – 2020

Nominated for Undergraduate Research Mentorship Excellence Award for Faculty, Office of Student Research, Appalachian State University, 2017

Nominated for Strickland Outstanding Junior Faculty Award, College of Arts & Sciences, Appalachian State University, 2015 and 2016

Nominated for Richard N. Henson Outstanding Adviser Award, College of Arts & Sciences, Appalachian State University, 2016

Gandy/Diaz Teaching Fellowship, Department of Biomedical Engineering, Georgia Institute of Technology, 2011 – 2012

CCNE Postdoctoral Fellowship, Emory-Georgia Tech Center for Cancer Nanotechnology Excellence, 2007 – 2010

Student Travel Fellowship, International Conference on Independent Component Analysis and Blind Signal Separation [C7], 2006

Nominated for Intel Foundation Ph.D. Fellowship, College of Computing, Georgia Institute of Technology, (two Ph.D. students nominated each year), 2004

SERVICE

PROFESSIONAL SERVICE

Program Committee Member, ACM Southeast Conference, 2021.

Reviewer for Journal of Computational Science Education, 2018.

Reviewer for IEEE EMBS Conference, 2009 – 2013, 2017.

Reviewer for IEEE Transactions on Biomedical Engineering, 2014.

Reviewer for IEEE Journal of Biomedical and Health Informatics, 2013.

Reviewer for IEEE Signal Processing Letters, 2011.

Reviewer for International Computer Music Conference, 2009.

FDA Microarray Quality Control (MAQC) project, 2008 – 2010.

Reviewer for IEEE Transactions on Speech and Audio Processing, 2005.

PROFESSIONAL AFFILIATIONS

Association for Computing Machinery (ACM), 2009 – present

Institute of Electrical and Electronics Engineers (IEEE), 2007 – present

IEEE Engineering in Medicine and Biology Society (EMBS), 2009 – present

Biomedical Engineering Society (BMES), 2009 – 2012

TECHNICAL SKILLS

Scientific Python, Linux, Git, Matlab, Java

REFERENCES

Available upon request.