Philip Hoskins

phoskins@math.arizona.edu
www.linkedin.com/in/philip-hoskins

SUMMARY OF SKILLS

Applied mathematics

- Analyzing and solving problems in image reconstruction, image processing, optics and electromagnetism (Maxwell's equations), acoustics, and inverse problems
- Mathematical modeling and numerical simulation of physical systems
- Advanced coursework in imaging science, linear algebra, probability and statistics, differential equations, and Fourier analysis (applicable to signal processing)

Algorithm development

- Designing, prototyping, and testing new algorithms in MATLAB, C/C++, Python, and Fortran
- Industry internship in computer vision
- Practical experience with object-oriented programming concepts
- Familiarity with coding in Linux environment

PROFESSIONAL EXPERIENCE

Research Scientist-Summer Intern
Smiths Detection, Newark, CA

- Worked with team of scientists and software developers on X-ray computed tomography (CT) explosives detection systems
- Project working with new segmentation/detection algorithms for identifying explosive material in 3D CT data sets
- Wrote technical report and documentation detailing image processing and machine learning techniques utilized by the new algorithms
- Contributed code to simulate scan projection images of simulated threats, utilized in Threat Image Projection (TIP) software for operator training

Graduate Research Associate
Department of Mathematics, University of Arizona, Tucson,AZ

- Conducted research in the theoretical and algorithmic foundations of novel medical imaging modalities
- Developed fast algorithm applicable to limited angle reconstruction in photoacoustic/thermoacoustic tomography (PAT/TAT)
- Developed fast, high-order accurate reconstruction algorithms for magnetoacoustoelectric tomography (MAET)
- Developed fast, high-order accurate numerical methods used to conduct high-fidelity simulations of the forward model of MAET
- Wrote software application used to produce reconstructed images of publication quality
- Created software for the visualization of electric current flows over the surface of tissue
- Assisted with biomedical experiments running a prototype MAET scanner, created gel phantoms to simulate biological tissue, and helped process collected data
- Presented results of research in both seminars at the University of Arizona and conferences at other universities

Undergraduate Research Assistant
Department of Mathematics, University of Houston–Clear Lake, Houston, TX

- Performed computer simulations in MATLAB of the Hindmarsh-Rose neuron model.
- Applied cluster analysis techniques for detecting synchronized bursting in networks of Hindmarsh-Rose neurons

OTHER EXPERIENCE

Graduate Teaching Assistant
Department of Mathematics, University of Arizona, Tucson,AZ

- Instructor of record for undergraduate courses in statistics, calculus, and college algebra.
- Effectively communicated mathematics to large groups of students of various levels of preparation through lectures
- Met individually with students during office hours to review mathematical concepts, explain course expectations and objectives, and addressed other conflicts and concerns
- Evaluated student work through assignments, quizzes, and exams, and provided constructive feedback both in writing and in person

Tutoring Coordinator
Department of Mathematics, Texas A&M University, College Station, TX

- Supervised a team of undergraduates tutoring various subjects for the math department

EDUCATION

Doctor of Philosophy, Mathematics
University of Arizona, Tucson, AZ, expected 2020
GPA: 3.9/4.0

Master of Science, Mathematics
Texas A&M University, College Station, TX, 2015
GPA: 3.8/4.0

Bachelor of Science, Mathematical Sciences
University of Houston–Clear Lake, Houston, TX, 2013
GPA: 3.7/4.0

ACTIVITIES

Science City Volunteer, Tucson Festival of Books
AMS Graduate Student Chapter President, Texas A&M
High School Math Competition Grader, Texas A&M University
SMaRT Camp Counselor, Texas A&M
NSF Scholarship Organization Member, University of Houston–Clear Lake

AWARDS

Dean's Scholarship, Texas A&M University
NSF STEM Scholarship, University of Houston—Clear Lake