

Tom Overman
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Education

University of Texas at Arlington
Bachelor of Science - Mathematics, Biomedical Engineering, Expected May 2020
GPA: 4.0

Research Experience

Research in Industrial Projects for Students (RIPS) Summer Research Program at the Institute for Pure and Applied Mathematics at UCLA, June 2019 - August 2019, Los Angeles, CA

- A nine-week summer research program at the Institute for Pure and Applied Mathematics at UCLA focusing on applied mathematics used in industrial projects
- Worked with Dr. Robert Falgout from Lawrence Livermore National Laboratory (LLNL) on developing a parallel-in-time algorithm for nonlinear PDE-constrained optimization problems using multigrid methods
- Contributed to the XBraid parallel-in-time open-source software developed by LLNL
- Significant work in numerical analysis, C programming, and parallel programming

Center for Undergraduate Research in Mathematics Research Program in Survival Analysis, University of Texas at Arlington, August 2018 - June 2019, Arlington, TX

- Worked with Dr. Suvra Pal and a group of other students on ideas in survival analysis. Most of the work was focused on properties of the generalized gamma distribution and parameter estimation for right-censored lifetime data
- Significant simulation and testing using R
- Program funded by NSF-funded CURM program

Undergraduate Cognitive Neuroscience Student Researcher, University of Texas at Arlington, January 2019 - May 2019

- Worked with Dr. Levine and a group of other students on problems in cognitive neuroscience including biological neural networks and cognitive mathematical modeling. Helped run experiments and data analysis
- Part of a special topics course in cognitive and neural modeling
- Simulated biological neural networks in Matlab

REU in Mathematics of Medical Imaging, University of Texas at Arlington, August 2017 - August 2018, Arlington, TX

- Worked with Dr. Gaik Ambartsoumian on the Mathematics of Medical Imaging
- Using mathematical methods such as the Radon Transform, Back Projections, and Filtering for medical imaging applications and simulation. Explored more advanced extensions such as the V-line Radon transform

- Included significant modeling of systems in Matlab
- Program funded by NSF

Work Experience

Planet Access, Software Developer and IT Consultant, June 2017 - Present, Irving, Texas

- Server building, backup development, software optimization, and system automation
- Software development in Python, Ruby, JavaScript. Included development of complex architectures such as project management systems and payment systems.
- Significant work with Linux systems, remote servers, and bash scripting
- Communicate effectively with clients to develop useful technological solutions

Presentations

Oral Presentations:

“On Some Flexible Statistical Distributions to Model Lifetime Data” - 99th Annual Conference of the Texas Section of the Mathematical Association of America - Tarleton State University - March 2019

“A Parallel-in-Time Multigrid Approach to Constrained Optimization” - RIPS Project Day at The Institute for Pure and Applied Mathematics - University of California, Los Angeles - August 2019

“A Parallel-in-Time Multigrid Approach to Constrained Optimization” - Joint Mathematics Meeting - Denver, CO - Upcoming (January 2020)

Poster Presentations:

“Use of Parametric Distributions to Model Survival Data and Associated Model Discrimination” - Gulf States Math Alliance Conference - University of Texas at Arlington - February 2019

“A Parallel-in-Time Multigrid Approach to Constrained Optimization” - Joint Mathematics Meeting - Denver, CO - Upcoming (January 2020)

Awards and Scholarships

- College of Engineering Dean’s List
- College of Science Dean’s List
- UTA Presidential Scholarship - Awarded four consecutive years
- Janet and Mike Greene Endowed Engineering Scholarship

Skills and Qualifications

- Proficient with: Python, C, Matlab, Java, HTML, CSS, PHP
- Experience with: R, Ruby, JavaScript, MySQL, LaTeX, Solidworks, COMSOL

Relevant Upper-level Coursework

- Differential Equations, Linear Algebra, Analysis I, Abstract Algebra I, Discrete Mathematics, Mathematical Statistics, Numerical Analysis I, Complex Variables
- Biomechanics and Fluid Flow, Linear Systems in Bioengineering, Digital Signal Processing
- Special Topics: Neural and Cognitive Modeling, Mathematics of Medical Imaging
- Significant undergraduate coursework in biology, chemistry, organic chemistry, and physics