ZIYI (FRANCIS) YIN

CODA S1363C, 756 West Peachtree Street NW, Atlanta, GA 30308 | ziyi.yin@gatech.edu | (470)342-1400

EDUCATION

Georgia Institute of Technology   Atlanta, GA
- Ph.D. student in Computational Science and Engineering   *Aug 2019 - Aug 2024 (Expected)*
- GPA: 4.00/4.00
- Relevant Coursework: Machine Learning, Exploration Seismology, Imaging with Data-driven Models, Continuous Algorithms with Optimization and Sampling, Iterative Methods for System of Equations

Emory University   Atlanta, GA
- B.S., Applied Mathematics and Statistics (summa cum laude) | Computer Science
- GPA: 3.98/4.00, Major GPA: 4.00/4.00   *Aug 2017 - May 2019*
- Member of Phi Beta Kappa Honor Society
- Relevant Coursework: Iterative Methods for Linear Equations, Partial Differential Equations, Numerical Analysis, Data Structures and Algorithms, Probability and Statistics, Computer Architecture

Beihang University   Beijing, China
- Concentration: Mathematics   *Sep 2015 - Jul 2017*
- Relevant Coursework: Real Analysis, Abstract Algebra, Complex Analysis, Analytical Geometry

RESEARCH INTEREST

Machine Learning, Scientific Computing, PDE-constrained Optimization, Inverse Problems

RESEARCH EXPERIENCE

Georgia Institute of Technology   Atlanta, GA
Graduate Research Assistant   *Aug 2019 - Present*
- Advisor: Prof. Felix Herrmann
- Conduct research in SLIM (Seismic Laboratory for Imaging and Modeling) group on deep learning applications of wave-equation based imaging, such as seismic and photoacoustic imaging
- Focus research on loop-unrolled imaging on solving Helmholtz equations, combine traditional Krylov-based GMRES solver with convolutional neural network by parameterizing iteration histories
- Work on extended source imaging in wavefield reconstruction inversion problems with variable projection methods; currently work on loop-unrolling CG algorithm for source estimation and generate short-wavelength images by automatic differentiation through iteration histories

Pactera Technology International Ltd.   Dalian, China
Machine Learning Intern   *May 2019 - Aug 2019*
- Engaged in research in Natural Language Processing in the field of machine learning and deep learning models (neural network/ensemble learning)
- Developed highly scalable classifiers according to TenserFlow and BERT to improve the performance of chat bots in a daily communication setting
- Improved the classifiers gradually to extract more ambiguous intents from users' texts in various cases

Emory University   Atlanta, GA
Honors Research   *Jul 2018 - Apr 2019*
- Advisor: Prof. James Nagy
- Awarded Highest Honors (Summa Cum Laude) in Applied Mathematics and Statistics
- Conducted individual research on numerical solutions to large-scale ill-posed inverse problems, and applications in X-ray tomography imaging
- Derived Regularize Conjugate Gradient Method in MATLAB, which integrates the image segmentation result as a prior and solve the penalized least squares problem to reconstruct the whole image

- Wrote honor thesis - Edge Detection and Enriched Subspaces, defended thesis against thesis examination committee and published thesis in Emory Electronic Theses and Dissertations (ETD) Repository

LEADERSHIP EXPERIENCE

Society of Exploration Geophysicists Atlanta, GA
Secretary, Georgia Tech Student Chapter Nov 2019 - Present
- Hold bi-weekly seminars within Schools of Computational Science and Engineering, Earth and Atmospheric Sciences, Electrical and Computer Engineering; invite senior students and outstanding professors to share research projects and intern experiences
- Organize workshops to invite senior students and career advisors to introduce industry relationship, help students revise resume and help practice interview skills
- Make future plans about field trip of seismic experiment, SEG event participation and fundings

EPASS Peer Tutoring Program, Emory University Atlanta, GA
Teaching Assistant May 2018 - May 2019
- Conducted face-to-face sessions for math students up to 6 hours each week
- Review and summarize key points of the course contents
- Explain practice problems and project questions to students

Office of Undergraduate Studies, Emory University Atlanta, GA
Academic Fellow Aug 2018 - May 2019
- Co-Conducted orientations for Emory Class of 2022 freshmen, and co-hosted info sessions
- Mentored eight international students throughout freshman year regarding both academics and lives
- Organized two meetings with these eight international students each month regarding starting a new academic life at Emory and blending into the local culture

SKILLS

- Programming: Python, MATLAB, Julia, Java, C/C++, PyTorch, SQL, PHP, R, Assembly, LaTeX
- Language: English (Proficient), Mandarin (Native), German (Elementary)