Alexander DeLise

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Education

Florida State University Tallahassee, FL
B.S. Computational Science with Honors, GPA: 4.00/4.00 2023–2027

- Thesis: Active Learning for Conditional Generative Compressed Sensing
- Advised by Dr. Nick Dexter through the Honors in the Major Program
- Selected Coursework: Computational Probabilistic Modeling, High Performance Computing, Monte Carlo Methods, Data Science Meets Health Science

Florida State University Tallahassee, FL
B.S. Applied and Computational Mathematics, GPA: 4.00/4.00 2023–2027

- Activities: Undergraduate Research Opportunity Program, Presidential Scholars Program, *President*, Pi Mu Epsilon Mathematics Honor Society, Society for Industrial and Applied Mathematics
- Selected Coursework: Advanced Calculus I and II (Analysis)

Academic Experience

Florida State University Tallahassee, FL
Undergraduate Researcher - Generative Compressed Sensing November 2026 – Present

- Advised by Dr. Nick Dexter
- Research topics: compressed sensing, generative modeling, inverse problems, active learning, scientific machine learning, high-dimensional representation learning
- Languages and tools: Python, PyTorch

Emory University Atlanta, GA
Research Fellow – Scientific ML and Data Science June 2025 – August 2025

- Advised by Dr. Matthias Chung
- Research topics: scientific machine learning, inverse problems, low-rank matrix approximation, Bayes risk minimization, rank-constrained regression
- Languages and tools: Python, PyTorch

University of Tennessee, Knoxville Knoxville, TN
Research Fellow – Quantum Algorithms May 2024 – April 2025

- Advised by Dr. James Ostrowski
- Research topics: quantum computing, variational quantum algorithms, constrained optimization
- Languages and tools: Python, Pennylane, PyTorch, Pandas

FAMU-FSU College of Engineering Tallahassee, FL
Undergraduate Researcher – Operations Research September 2023 – June 2025

- Advised by Dr. Arda Vanli
- Research topics: operations research, industrial engineering, mixed-integer nonlinear programming, data-driven healthcare, disease modeling
- Languages and tools: Python, Gurobi, GAMS, IBM ILOG CPLEX

Industry Experience

Johns Hopkins Applied Physics Laboratory — Laurel, MD
Data Science Intern — Incoming May 2026

- Incoming Data Science intern in the KBS Systems Performance Analysis group

Publications

Conference Publications

1. **A. DeLise**, S. Abazari, A. Vanli. "An Epidemiological Mixed-Integer Nonlinear Programming Framework for Vaccine Modeling and Patient Allocation During Pandemics", *Proceedings of the 10th North American International Conference on Industrial Engineering and Operations Management, Orlando, Florida, 2025.* DOI: 10.46254/NA10.20250088.

Preprints

1. **A. DeLise**, K. Loh, K. Patel, M. Teague, A. Arnold, M. Chung. "Optimal Linear Baseline Models for Scientific Machine Learning" (under review), 2025. arXiv:2508.05831.

2. A. Wilkie, **A. DeLise**, A. Del Real, R. Herrman, J. Ostrowski. "Learning Feasible Quantum States for Quadratic Constrained Binary Optimization Problems" (under review), 2025. arXiv:2508.02590.

Presentations

Invited Talks

1. Nov 2025. *SIAM Student Chapter*, Florida State University, Tallahassee, FL.
Optimal Linear Baseline Models for Scientific Machine Learning [pdf]

Contributed Talks

1. Jan 2026. *Joint Mathematics Meetings, AMS Contributed Paper Session on Computer Science, Information, and Communication*, Washington, DC.
Optimal Rank-Constrained Mappings for Linear ED Architectures

Poster Presentations

1. Jan 2026. *Joint Mathematics Meetings AMS-PME Student Poster Session*, Emory University, Atlanta, GA.
Optimal Rank-Constrained Mappings for Linear ED Architectures [pdf]

2. Aug 2025. *CMDS REU Poster Presentation*, Emory University, Atlanta, GA.
Optimal Rank-Constrained Mappings for Linear ED Architectures [pdf]

3. Apr 2025. *25th Annual Undergraduate Research Symposium*, Florida State University, Tallahassee, FL.
Data-Driven Patient Allocation Optimization with Epidemic and Vaccine Modeling [pdf]

4. Feb 2025. *Florida Undergraduate Research Conference*, University of South Florida, Tampa, FL.
Data-Driven Patient Allocation Optimization with Epidemic and Vaccine Modeling [pdf]

5. Jan 2025. *Joint Mathematics Meetings AMS-PME Student Poster Session*, Seattle, WA.
Learning Feasible States with ma-QAOA and QAOA for Constrained Optimization [pdf]

6. Jul 2024. *UTK Summer Research Symposium*, University of Tennessee, Knoxville, TN.
Learning Feasible States with ma-QAOA and QAOA for Constrained Optimization [pdf]

7. Apr 2024. *24th Annual Undergraduate Research Symposium*, Florida State University, Tallahassee, FL.
   Cost-Effective Location Allocation for COVID-19 Patient Assignment in Florida: A Data-Driven Approach [pdf]

Honors and Awards

- Barry M. Goldwater Scholarship Institutional Nominee, Florida State University 2025
- Barry M. Goldwater Scholarship Institutional Nominee, Florida State University 2024
- Presidential Scholar, Florida State University 2023
- Pi Mu Epsilon Mathematics Honor Society, Florida State University 2023
- Bright Futures Academic Scholar, State of Florida 2023