Luke M. Bedrosian

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EXPERIENCE

The Aerospace Corporation Chantilly, Virginia
L1 Software Engineer, Modeling & Simulation Computing Dept. May 2024 – Present

- Develop and enhanced features for PDST, a space architecture modeling and visualization tool, supporting the needs of Aerospace program offices and government customers (C++, Qt).
- Optimized PDST's performance with concurrent computing methods and refined the user interface, resulting in increased efficiency and usability for end-users.
- Spearheaded the integration of PDST into an automated workflow to visualize performance metrics, resulting in streamlined analysis processes and enhanced decision-making efficiency for government customers (C++, Qt, Python, Linux)
- Designed and implemented robustness metrics for satellite network graphs, developing an intuitive UI to convey insights and enhance decision-making for government customers (C++, Qt, Eigen)
- Implemented a spherical Voronoi algorithm to display heatmap visualizations on both a 2D earth map and a 3D globe (C++, Qt)

Technical Intern, System of Systems Engineering Dept. May 2023 – May 2024

- Implemented various graph analysis algorithms and incorporated them into an existing space architecture and modeling visualization software tool (C++, Qt).
- Implemented probabilistic graph analysis algorithms using Monte Carlo simulation to estimate future performance of satellite networks (C++).
- Produced SysML models of US cloud provider services, giving our program offices and government customers greater clarity when architecting their cloud solutions
- Led discussions with government customers to establish rapport, clarify objectives, and define project scope, goals, and deliverables

Systems Engineering, Architecture and Knowledge Lab College Station, Texas
Undergraduate Research Assistant Dec 2020 – May 2023

- Developed Comet, a multi-objective optimization tool for designing satellite electric power systems, for Lockheed Martin, leading to pareto front exploration and more optimal designs (Python, DEAP)
- Developed a multi-fidelity satellite simulation tool with hardware-in-the-loop (Python, Ruby)
- Developed rules-based design algorithms using empirical relationships to size the electric propulsion systems of satellites during early architecting phase (Java, JESS)

SKILLS

Programming Languages: C++ (Proficient), Python (Proficient), C (Fluent), Java (Fluent), HTML/CSS/ JavaScript (Basic), Haskell (Basic)
Frameworks/Libraries: Qt (C++), Pandas, NumPy, SciPy, DEAP, TensorFlow, Orekit, Eigen
Other Software: Linux/Unix, Visual Studio, VS Code, PyCharm, IntelliJ, MATLAB, STK, XML, JSON

EDUCATION

Georgia Institute of Technology Atlanta, Georgia (Online)
Master of Science in Computer Science May 2027 (Expected)
Relevant Coursework: Operating Systems, Software Architecting, HCI

Texas A&M University College Station, Texas
Bachelor of Science in Aerospace Engineering May 2024
Minors: Computer Science, Mathematics
Honors: Magna Cum Laude, Engineering Honors, Presidents Endowed Scholar, Chief Student Leader