Pundit Vorakitolan

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Education

B.S. Electrical Engineering, Minor in Math — **Expected May 2026**
University of Oklahoma – *EMF, Linear Algebra, Signals & Systems, Microprocessors, Probability & Statistics* — *GPA: 3.6/4.0*

Experience

Advanced Radar Research Center — **Nov '22 – Present**
Research Assistant – Dr. Jessica Ruyle — *Norman, OK*

- Measured and characterized electrically small non-LTI antennas using common RF lab equipment in an anechoic chamber
- Constructed and tested sleeve baluns to help investigate overcoming physical gain/bandwidth limits using non-LTI systems

OU Nanophotonics Laboratory — **Sept '24 – Present**
Research Assistant – Dr. Binbin Weng — *Norman, OK*

- Researched advanced optical structures to miniaturize mid-infrared semiconductor lasers/detectors for gas emissions
- Coded scripts and performed signal processing on non-dispersive infrared sensor outputs, including with a lock-in amplifier

MIT Lincoln Laboratory — **May '24 – Aug '24**
SATCOM Intern – Dr. Michael Craton, SATCOM Systems and Operations Group — *Lexington, MA*

- Built a satellite-tracking antenna terminal targeting the GPS and Iridium constellations
- Designed and simulated a helical wire antenna feed for a parabolic dish antenna in Ansys HFSS simulations
- Demonstrated an RF front end design, calculating link budget and using ADS to design PCBs for impedance matching networks
- Wrote software to control and operate an antenna positioner to track satellites based on TLEs

MIT Lincoln Laboratory — **Sept '23 – Feb '24**
Technical Assistant – Drs. Cara Kataria & Will Moulder, RF Technology Group — *Lexington, MA*

- Developed an optimization algorithm to synthesize configuration for a 19,000 element reflectarray satellite antenna by controlling individual phase states
- Improved beam efficiency of the antenna from 89% to 93% with an extremely quick algorithm

Electromagnetic Algorithms Intern, RF Technology Group — **May '23 – Aug '23**

- Built local-search algorithms into EM simulations to efficiently minimize side lobe radiation for very large antenna arrays.
- Brought runtime down to the order of minutes for a problem that was otherwise intractable with conventional algorithms

Boeing — **June '22 – Jan '23**
Electromagnetic Effects Intern — *Oklahoma City, OK*

- Automated post-processing and analysis of S-parameter data from antenna coupling simulations by coding MATLAB scripts, allowing for the computation of larger datasets and reducing creation time for RF cosite reports
- Authored EMC/EMI test procedures to verify military aircraft system upgrade performance
- Performed electromagnetic compatibility testing (MIL-STD-461) using VNAs, spectrum analyzers, and oscilloscopes

Publications

P. Vorakitolan, C. Y. Kataria, W. F. Moulder, and W. J. Blackwell, "**Phase-Only Optimization of Beam Efficiency for a Large Scanning Reflectarray**," in *Proceedings of the 2024 IEEE/URSI International Symposium on Antennas and Propagation*, Florence, Italy, July 2024.

Conference Poster

P. Vorakitolan, D. Zheng and A.K.F. Rahman,"**Modeling Pavement Quality Index with Pavement Condition Data**," in *Oklahoma Transportation Research Day*, Oklahoma City, USA, Oct. 2021. **2nd Place Poster Award.**

Involvement

Marketing Director: Hacklahoma — Apr '23 – Present
Led a team of 5 artists to create merch and graphics to promote the largest hackathon in Oklahoma. Grew social media account by 25% over one year.

Graphic Designer: Society of Asian Scientists and Engineers — May '24 – Present
Deployed the Adobe Creative Suite to design graphics and a brand identity and executed a cohesive social media strategy to drive engagement.

Event Supervisor: Science Olympiad — Sept '22 – Present
Developed and administered tests covering antenna theory & electronic circuits for multiple high school science tournaments in Oklahoma.