Kobe Prior

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Education

Colorado School of Mines **May 2027**
Master of Science in Electrical Engineering, Focus – Antennas and Communication GPA: 4.0
- IEEE Eta Kappa Nu Honor Society

Colorado School of Mines **May 2026**
Bachelor of Science in Electrical Engineering GPA: 4.0
- Outstanding Graduating Senior, 6x Dean's List Honors, Mines Undergraduate Research Fellow, VICEROY Scholar

Work Experience

Zeta Associates **May 2026 – August 2026**
DSP Intern Greenwood Village, CO
Utilized four passive collectors to generate a 3D geolocation with a 95% confidence ellipsoid of a sUAS and its controller

- Implemented an FFT-accelerated cross-ambiguity algorithm to determine time difference of arrival between collectors in order to meet 100ms latency requirement with conservative margin
- Leveraged Gauss-Newton optimization to solve nonlinear multilateration systems from CAF-generated time delays
- Designed a graphical user interface (GUI) to dynamically visualize the geolocation of a sUAS and its controller in real-time

Rincon Research Corporation **May 2025 – July 2025**
DSP Intern Centennial, CO
Developed physics simulation and small scale hardware realization of bent-pipe communication system

- Embedded a CesiumJS-based orbit visualization tool into a custom GUI to render satellite trajectories, identifying line-of-sight paths for ideal links between ground stations and satellites
- Formulated a dynamic channel model informed by satellite position and trajectory data to simulate time delay, path loss, and Doppler shift
- Controlled a signal generator and two software-defined radios in a small-scale hardware demonstration by issuing asynchronous ZMQ and SSH commands from the control interface

Colorado School of Mines **August 2023 – Present**
Resident Advisor Golden, CO
- Maintained a 100% 1:1 meeting rate over 3+ years to mentor and support 30+ residents, and proactively built community by collaborating with fellow resident advisors to plan fun activities.

Colorado School of Mines **August 2022 – Present**
Student Researcher Golden, CO
- Characterized scattering due to structured waveforms incident on variable geometry scatterers through full-wave FDTD simulations and physical experimentation

Projects

Low-cost, Software-defined, 16-port, Phased Array **August 2025 – Present**
Phased Arrays and Scattering Applications Colorado School of Mines
- Designed a custom 16-port digital phase-shifting network in Altium Designer, creating hierarchical schematics, custom footprints, and schematic symbols for power dividers/combiners and 8-bit phase shifters
- Developed the complete control architecture, including STM32 firmware for serial communication and addressing of phase shifters and a Python GUI for manual phase control and automated beam-scanning configurations
- Demonstrated brute force direction-finding and generation of structured waveforms, presenting results at the VICEROY Symposium and the 2026 National Radio Science Meeting

Low-Noise Amplifier **January 2026 – May 2026**
Active RF and Microwave Devices Colorado School of Mines
- Designed and fabricated an LNA in Keysight ADS achieving >10 dB gain and <3 dB noise figure at 2.5 GHz
- Characterized the amplifier with a vector network analyzer and spectrum analyzer to verify gain and linearity

Skills

Languages: Python, C++, Embedded C, MATLAB, Verilog, Arduino, HTML, LaTeX
Software: Keysight ADS, XMidas, Altium Designer, HFSS, Vim, Git, Linux, GNU Radio, Microsoft Tools
Testing Equipment: Vector Network Analyzer, Oscilloscope, Digital Multimeter, Spectrum Analyzer, Function Generator
Hardware: Arduino, STM32, SDR, LPKF, FPGA, 3D Printer, Printed Circuit Board Design