Thomas Kost

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U.S. Citizen

Education

University of California, Los Angeles *Anticipated June 2022*
M.S. Electrical Engineering, concentration in Signals & Systems
- *GPA not yet established*

B.S. Electrical Engineering, Cum Laude *June 2021*
- Cumulative GPA: **3.823**

Relevant Coursework: Digital Filter Design, Convex Optimization, Linear Dynamic Systems, Communication & Information Theory, Machine Learning, Analog Circuit Design

Work Experience

Viasat – Space Systems Engineering Intern *June 2021 - November 2021*
Space Systems Engineer responsible for creating an analysis tool for terrestrial-satellite communication networks

- Designed user friendly application analyzing novel Link-16 terrestrial-satellite network performance
  - Created back-end ingesting raw recording files and calculating network performance metrics
  - Created simulator determining satellite position and pointing angles from telemetry
  - Linked C++ back-end and simulator to python GUI with Cython to create a user friendly interface

General Dynamics – Signal Processing Engineering Intern *June 2020 - September 2020*
Digital Signal Processing Engineer for high-throughput Software Defined Radio applications

- Created CUDA based signal processing library to accelerate DSP algorithms through using GPUs
  - Designed polyphase channelizer to isolate and filter QPSK signals and return them at baseband
  - Designed CUDA based Costas loop for time aligning QPSK signals
  - Presented polyphase channelizer for use in 5G applications
- Used CMake to generate maintainable and expandable code base with automated unit testing

Viasat – Software Engineering Intern *June 2019 - September 2019*
Designed software to produce human readable abbreviated messages upon receipt at connected terminals

- Created a parsing tool in python for government Link-16 standards, **automated 3 month task** to minutes
- Created C++ engine pairing live Link-16 messages with human readable definitions
- Integrated back-end engine and libraries generated from parsing Link-16 standards into production code

Project Experience

Bruin Racing Baja SAE – Electronics Director *September 2018 - June 2021*
Designed, tested, and validated the sensor and computational suite for the Baja SAE collegiate competition

- Designed and implemented robust sensor and actuation system for Electronically actuated Transmission
- Improved engine performance by **5%** through redesigned power system
- Created Data Acquisition systems characterizing impact events, braking capabilities, & engine performance
- Standardized hardware and software devops pipelines to improve collaboration and visibility

Quad-copter Design – Personal Project *September 2018 - Present*
Designed and implemented a Teensy based quad-copter, control logic, and transmitter

- Designed Transmitter and Reciever to allow for customizable and longer distance RF control of the vehicle
- Designed PID controller for self leveling of the quadcopter

Skills

- **Software:** C++, Python, MATLAB, CUDA, CMake, shell scripting, GitLab/Github CICD, Verilog
- **Skills:** Filtering, Estimation, Image Processing, Orbital mechanics, System ID, Classification, Simulation