LIAM CHALK

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PROFESSIONAL SUMMARY

FPGA Designer and Electrical Engineer

Looking for work in designing computational FPGA systems in the aerospace industry. Experienced in signals data filter design and optimization for high frequency and reliability.

EDUCATION

Harvey Mudd College Electrical Engineering Major (Current Senior)   2019 - 2023

Relevant Coursework: Digital Electronics, Computer Engineering, Advanced Systems Engineering, Analog Electronics, Dynamics of Elastic Systems, Operations Research, State Estimation, Continuum Mechanics, Materials Engineering, Experimental Engineering, Manufacturing Engineering

St. Albans High School   2015 - 2019

SAT: 1570/1600

SKILLS

FPGA Design	SystemVerilog, Xilinx Vivado, ModelSim, Zynq AAPSoC, ARM and RISC-V Processors
FPGA Filters	Particle Filter, Extended Kalman Filter, Autocorrelation Filter, Moving Average Filter
Programming	Python, C++, Java, HTML, Git, Django, React, Tool Command Language
Software	MATLAB, SolidWorks CAD, Autodesk CAD, COMSOL, Simulink
Path Planning	A*, D*, PID Control, Cellular Decomposition, Traveling Salesman Problem
Hardware	Radar, GPS, IMU, Magnetometer, Arduino, Controller Area Network, Digital Circuitry

TECHNICAL EXPERIENCE

FTS International FPGA Designer   Summer 2022

FPGA design for high frequency software defined radio signal processing for use on satellites

Developed filtering and analysis techniques in Verilog and integrated within Python pre and post processing

Silvus Technologies   Fall 2022

Neural network localization of radio frequency signal origin and environment mapping using GPS, IMU, LiDAR, compass, and altimeter UAV drone data collection

Team of five students coding in Python to test in simulation and real-world experimental data collection

Doosan Bobcat Autonomous Vehicle Clinic   Fall 2021

Autonomous mowing area coverage for a ZT6100 lawnmower using state estimation and path optimization

Team of six students equipped hardware and wrote software for Simultaneous Localization and Mapping

WePackItAll Operations Research Consultant   Summer 2021

Streamlining of a supplement packaging line using lean manufacturing principles and single-piece flow

Won first place in the regional IISE paper competition and third in the national competition

$1.2 million in estimated annual savings from reduced labor costs and inventory

Laguna Clay Operations Research Consultant   Summer 2021

Complete redesign of a ceramics manufacturing facility floorplan using value stream mapping and gemba kaizen

$740,000 in estimated annual savings from reduced floorspace and forktruck usage

EXTRACURRICULARS

Leadership	Honor Board chair, Case dorm president, Asian affinity group president
Extracurriculars	Machine shop proctor, rocketry club, The Student Life news writer, club rugby
Awards	Davies Prize for Outstanding Engineering Design, Riggs Fellowship, National Merit Scholar, Presidential Scholar Finalist, Seymour R. Bolten Fellowship