LIAM CHALK

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PROFESSIONAL SUMMARY

FPGA Designer and Electrical Engineer
FPGA Designer looking for work in data processing. Experienced in signal 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

Silvus Technologies Fall 2022
Neural network localization of radio frequency signal origin and environment mapping using GPS, IMU, LiDAR, compass, and altimeter UAV data collection
Team of five students coding in Python and simulating results

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

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