

# LIAM CHALK

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## PROFESSIONAL SUMMARY

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### **FPGA Designer and Electrical Engineer** (Current Senior)

FPGA Designer looking for work in the financial investment and trading sector. Experienced in signal data filter design and optimization for high frequency execution.

## EDUCATION

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

Relevant Coursework: Digital Electronics, Computer Engineering, Advanced Systems Engineering, Electronic Circuits, Dynamics of Elastic Systems, Operations Research, State Estimation, Continuum Mechanics

### **St. Albans High School** 2015 - 2019

SAT: 1570/1600

## SKILLS

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

## TECHNICAL EXPERIENCE

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### **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

### **National Institute of Standards and Technology Intern** Summer 2020

Chemical engineering analysis of automobile paint composition and the effects of weathering  
Lab testing using mass spectrometry, gas chromatography, and FTIR spectroscopy

## EXTRACURRICULARS

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