

# ALEJANDRO MAYAGOITIA

Chicago, Illinois | [LinkedIn](#)

## EDUCATION

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**Yale University**, New Haven, CT  
*BS in Electrical Engineering and Computer Science*

Class of 2025  
GPA 3.80

## WORK EXPERIENCE

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**McDonnell Boehnen Hulbert & Berghoff LLP**, *Technical Advisor*, Chicago, Illinois July 2025 – Present

- Drafted and prosecuted over 25 U.S. and international patent applications in the fields of machine learning, artificial intelligence, computer vision, and circuit design
- Translated complex engineering documentation and lab results into clear, legal-technical language suitable for a generalist audience and USPTO examiners
- Analyzed patents and research cited in office action responses to develop office action response strategies for 30+ cases

**University College Dublin**, *Summer Researcher* May 2024 – August 2024

- Working off published papers, designed a sky imaging system using a Raspberry Pi, camera, and a solar panel
- Researched literature and wrote reviews on developments in computer vision, artificial intelligence, and solar panel technology
- Wrote bash scripts and cron jobs to automate system functions

## PROJECTS

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### Personal Lighting and Alarm Clock System

- Designed and built a personal lighting and alarm clock system using an ESP32, sensors, motors, and C/C++
- Optimized power consumption by implementing FreeRTOS task scheduling and low-power modes, significantly extending battery life
- Currently developing a web-based UI to enable remote configuration of alarm schedules and add greater system control

### CAFFEINE: Collaborative Affordable Framework for Experiments in Interactive Networked Electronics

- Engineered a mixed hardware/software framework for real-time low-latency sonification of sensor data from wearable embedded systems alongside a professor and team of peers (ESP32, C/C++, Python, SuperCollider)
- Developed functional audio synthesis demos using C/C++, Python, and Max/MSP
- Co-authored a technical paper detailing the system architecture, accepted for publication in the *Proceedings of the 2025 International Computer Music Conference (ICMC)*

### Musical Chessboard

- Designed and built a “Musical Chessboard” system that detects game states in real-time to drive an algorithmic music composition engine built in Max/MSP
- Developed Arduino firmware to interface with a 64-node sensor matrix (photoresistor/LEDs), implementing serial communication to stream physical board data to a Python backend for analysis
- Fabricated a custom enclosure by laser-cutting wood and acrylic and soldering hundreds of circuit components

## SKILLS

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- *Skills:* C/C++, Python, ESP32, Arduino, Embedded Systems, FreeRTOS, Circuit Analysis, Public Speaking, Strong Written Communication and Time Management, Fluent Spanish, Basic French