ZOLTAN CSAKI

WEBSITE PORTFILIO: *HTTPS://Z01IC.GITHUB.IO*
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EDUCATION

Cornell University, College of Engineering, Computer Science Major, Electrical Computer Engineering Minor (GPA 3.79) — May 2022

Lansing High School (GPA 94.5) — June 2018

WORK EXPERIENCE

THUMBTACK, SOFTWARE ENGINEERING INTERN — SUMMER 2021

- Refactored the frontend and backend of the cost pages to use Go micro-service architecture instead of PHP
- Created backend for the pro list on the Thumbtack app explore page that recommends a category and displays a carousel of pros

CORNELL UNIVERSITY, TEACHING ASSISTANT, MACHINE LEARNING & INTRO CS — 2019 & 2021- NOW

- Ran office hours, graded projects and exams; topics including regularized linear models, boosting, kernels, neural networks etc.

MEZMERIZ, SOFTWARE ENGINEERING INTERN — SUMMER 2020 & JAN 2021

- Wrote software to display and interact with LIDAR point cloud scans using Typescript, Python, Angular, HTML, CSS
- Created a feature with a team allowing users to begin a comment thread by clicking on a point in a 3D rendering
- Implemented translating, rotating and scaling tools for 3D point clouds, added an undo/redo button, saved transformation matrices to database
- Created a timeline that sorts scans by date, a draggable knob on timeline that filters visible point clouds, and split screen point cloud comparison

KIONIX, SOFTWARE ENGINEERING INTERN — SUMMER 2019

- Created a demo for tech expos by mounting a Kionix accelerometer on a slot car and displaying sensor applications on a dashboard
- Analyzed sensor data for terrain detection, driver profile, g-force monitoring, and velocity measurement
- Improved data-sheet search on kionix.com; fixed retrieval by product name, updated SQL database, created a table to view and filter products

LEADERSHIP AND ACTIVITIES

CORNELL CUP ROBOTICS, LEAD — 2018 - NOW

2020-2021: Elected CS team lead. Managed 14 software engineers building a Star Wars droid featuring chatbot, object detection and path planning

- Implemented code review pipeline with pull requests, set goals and deadlines, led collaboration with other sub-teams

2019-2020: Programmer for an autonomous navigation sub-team, implemented simulations to plan autonomous paths,

- Off-boarded path planning computation from robot onto custom server using python socket
- Used LIDAR, infrared, ultrasonic indoor GPS and encoders to detect objects, map out a virtual environment and plan paths

2018-2019: On the electrical and computer engineering team, developed robotics kits for kids using a custom a PCB, Raspberry Pi and Arduino

- Created universal one plug connections using RJ-12 cables for robotics electronics, programmed and wired a line-following Mini-bot

FTC ROBOTICS TEAM, PRESIDENT — 2015 - 2018

- Team lead junior year, and head programmer senior year. Worked with Java, sensors, 3D modeling and mechanical design
- Wrote code and submitted documentation that won the Control Award For Autonomous Design for writing an algorithm that uses gyroscopic and encoder data to correct estimated positional error using the law of cosines

PROJECTS

ELECTION PREDICTION, MACHINE LEARNING — DECEMBER 2020

- Used Pytorch to implement a graph convolutional neural net that predicted county election results based on population demographics

SETTLERS OF CATAN, FUNCTIONAL PROGRAMMING — DECEMBER 2019

- Programmed the board game Settlers Of Catan from scratch using OCaml, used ASCII art and mouse clicks in terminal, won TA Choice Award

CORNELL MAKE-A-THON, CUSTOM PAINT MIXING — FEBRUARY 2019

- Designed a device that allows users to select any RGB valued color, and makes that exact shade of color by autonomously mixing paint
- Created a GUI to select a color, then send data to an Arduino script that used servo motors to open paint valves for various time intervals and mix

SKILLS

Proficient: Python, Typescript, GO, Sensor integration, Git, Code Review Process
Familiar: C, Java, Pytorch, Angular, OCaml, PHP, Javascript, HTML, CSS, GraphQL, SQL, Embedded Programming, Arduino, Raspberry Pi, Circuitry

COURSES

Quantum Computing*, Foundations of Robotics,* Networks & Telcomm*, Graduate Algorithms*, Algorithms, Reinforcement Learning, Machine Learning, Large Scale ML, Computer Vision, Functional Programming, Operating Systems and Practicum, Object Oriented Programming and Data Structures, Discrete Structures, Embedded Systems, Digital Logic and Computer Organization, Electromagnetic Fields and Waves, Signals and Information, Linear Algebra, Differential Equations, Multivariable Calculus, Intro Operations Research, PHYS II: Electromagnetism

* Currently enrolled