Jacob Karaul

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EDUCATION

Union College **Schenectady, NY**
Bachelor of Science in Computer Engineering (GPA: 3.5) *Jun 2020*

EXPERIENCE

Infosys **Hartford, CT**
Associate Software Engineer *Oct 2020 - Present*
- Developing IoT manufacturing execution systems for leading aircraft manufacturer using DELMIA Apriso

BuildingFootprintUSA **Albany, NY**
Software Engineering and Data Science Intern *Jul 2020 - Sep 2020*
- Developed and tested geohashing libraries in Python, Java and streamlined third-party data integration

Software Engineering and Data Science Intern *Jul 2019 - Aug 2019*
- Researched and prototyped backend API endpoints using GCP and Elastic stack

Software Engineering and Data Science Intern *Jul 2018 - Aug 2018*
- Assisted in implementing neural network for building extraction from OSM tiles using fastai framework

Union College **Schenectady, NY**
Design Studio Research Assistant *Jan 2018 - Jun 2020*
- Assisted in research of vibrating tensegrity robot, co-author on 2020 IEEE SSCI research paper

Maker Studio Member *Sep 2017 - Jan 2018*
- Maintained various BCN3D, Ultimaker, Makerbot 3D printers and provided design consultation to students

PROJECTS

Onechuk *May 2021 - Jun 2021*
- Used Tensorflow Lite for Microcontrollers to run joystick gesture recognition on Nintendo nunchuk via CNN

Ponics32 *Mar 2021 - Apr 2021*
- Developed an ESP32-based FreeRTOS application for hydro/aero/aquaponics monitoring & control with automated sensor readings and HTML code generation; evolved from 'PiPonics' project

PiPonics *Jan 2021 - Mar 2021*
- Created a full-stack web server on a Raspberry Pi 4B for *ponics system management using Docker
- Used low-power STM32 ARM-Cortex M4 board for sensor data collection, serial communication with Pi

ECE Capstone: The Autonomous Flocking µ-Sub (AFµS) Project *Mar 2019 - Jun 2020*
- Researched and tested PPM-encoded optical communication system for inter-flock transmission
- Implemented attitude PID controller for dual-drive thrust system
- Awarded Alice P. and Donald C. Loughry (1952) Prize in Computer Engineering

Presidential Green Grant Project: Modular Aquaponics *Mar 2017 - Jan 2020*
- Performed research into a scalable, modular aquaponics system for deployment in disaster-stricken areas

ADDITIONAL

- Programming Languages: Python, C, C++, Java, Javascript, Bash, C#, SQL, HTML/CSS
- Relevant Coursework: Embedded System Design, Data Structures and Algorithms, Artificial Intelligence
- UC AERO Club (Electronics Pod Chief Engineer - 2019), UC ITS Department, Campus Tour Guide