Ryu Okubo

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EDUCATION

•**Master of Science in Computer Engineering** *Expected May 2024*
University of Illinois Urbana-Champaign

•**Bachelor of Science in Computer Engineering (with Highest Honors)** *May 2022*
University of Illinois Urbana-Champaign GPA: 3.92/4.00
Honors: James Scholar, Dean's List, Vashney Family Scholarship

WORK EXPERIENCE

•**Bain & Company** *June, 2023 - August, 2023*
Associate Consultant Intern Toyko
 – Collaborated with cross-functional teams to support growth strategy for a prominent global alcohol beverage firm
 – Assisted in the creation of comprehensive business plans, including market entry strategies and product portfolio
 – Contributed to data analysis and financial modeling to assess potential acquisitions and partnerships

•**Yummy Future** *August, 2022 - May, 2023*
Robotics Software/Electrical Engineer Intern Champaign
 – Innovated and implemented an advanced MQTT-based wireless communication protocol using Python and C++, facilitating concurrent operation of numerous embedded systems
 – Spearheaded the design and construction of a cutting-edge circuit board, enabling seamless manipulation and control of inter-robot device interactions

•**BOSCH** *June, 2022 - July, 2022*
Machine Learning Engineer Intern Yokohama
 – Contributing to a project focused on the development of a Machine Vision system, facilitating accurate velocity measurement and precise positioning of test vehicles
 – Translated research findings into actionable insights by summarizing and publishing the results in the company's Wiki database, enhancing knowledge sharing and promoting a culture of continuous learning

RESEARCH EXPERIENCE

•**Wireless, Sensing, and Embedded Networked Systems Lab** *January, 2023 - current*
Millimeter-wave Radio-frequency identification for Next-generation Smart Infrastructure
 – Tools & technologies used: Python, Arduino, FMCW radar, signal processing
 – Developing world first low-power millimeter wave back scatter 2-way communication method

•**Human Dynamics and Controls Lab** *September, 2020 - May, 2022*
PURE (Personal Unique Rolling Experience) project - Human Robotic Interface team
 – tools & technologies used: Python, Teensy, IMU, VR
 – Contributed to a multi-disciplinary project aimed at developing hands-free and omnidirectional robotic wheelchair using an interactive and adaptive robot that is uniquely personalized for each user
 – Worked with the human-robotic interface team of the project to develop the novel lean-to-steer control method

•**Mobility and Fall Prevention Research Lab** *January, 2019 - May, 2022*
Brain Computer Interface Application of Detecting Human Anxiety State in VR Environment
 – Tools & technologies used: BCI, VR, signal processing, machine learning
 – Designed and developed Brain Computer Interface (BCI) based VR system to measure human anxiety level
 – Developed and validated EEG signal processing pipeline used to predict human gait activity via artificial intelligence

TECHNICAL SKILLS AND INTERESTS

Areas of Interest: IoT, Radar Communications, Artificial Intelligence, Signal Pßrocessing, Technical Consulting
Developer Tools: Python (Advanced), C/C++ (Advanced), Matlab (Intermediate), PCB Design (Intermediate)
Languages: Japanese (Native), English (Fluent), Mandarin (Fluent)
Soft Skills: Excel (Advanced), Power Point (Advanced)

PUBLICATIONS

• Designing a closed loop system to achieve real-time evaluation and manipulation of state anxiety while walking in virtual reality, *EMBS 2021*
• Online Classifier of AMICA Model to Evaluate State Anxiety while Standing in Virtual Reality, *EMBS 2022*
• EEG based Brain Computer Interface application of detecting human gait activity, *IDEAS 2022*
• Hands-Free Physical Human-Robot Interaction and Testing for Navigating a Virtual Ballbot, *ROMAN 2023*