Yahao (Ivan) Chen, EIT

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EDUCATION

Columbia University, Columbia Engineering New York, NY
MS in Mechanical Engineering, Robotics and Control Concentration - GPA: 3.93 10/2025
Courses highlights: Modern Control Theory, Robotics, Robot Learning, AI, Machine Learning, Material Selection

The City College of New York, Grove School of Engineering New York, NY
BE in Mechanical Engineering - GPA: 3.918 12/2023
Courses highlights: Mechanical Design, System Dynamics, Linear Elasticity, Adv. Fluid Mechanics, Orbital Mechanics

WORK EXPERIENCE

Hazen and Sawyer New York, NY
Mechanical Engineering Intern 06/2023 - 08/2023, 06/2024 - 08/2024
Designed and modeled piping system using Revit. Audited 50+ HVAC airflow, plumbing, P&ID drawings.
Implemented Carrier's HAP software to analyze heating/cooling load for large industrial spaces.
Analyzed refrigerant leakage concentration level in VRF-affected spaces with drawings and BIM360 3D models.
All tasks involved cross-disciplinary coordination and resulted in expedited engineering progress of related projects.

GAMCO CORP New York, NY
Production/R&D Intern 01/2022 - 04/2022
Co-supervised production department and proposed remapping of factory layout. Improved and maintained 6S.
Utilized AutoCAD as a connection between production and R&D for faster and more precise product development.

U.S. NAVY, USS BLUE RIDGE (LCC-19)
Machinist's Mate Petty Officer Second Class 03/2015 - 03/2019
Served in the U.S. Navy active duty for 4 years. Received Navy and Marine Corps Achievement Medal.
Operated and maintained ship's propulsion plant and associated equipment, including turbogenerators, condensers, evaporators, lube oil purifier, and various pumps. Supported ship receiving 2018 Mobility-Engineering Certification.
Led a team of 10 to complete critical missions professionally in a timely manner.
Delivered both classroom and hands-on training to coworkers, leading to expedited qualification processes.
Designated gauge calibrator and calibration work center supervisor, enabling ship to certify its field calibration lab.

PROJECT EXPERIENCE

Columbia University
Control and Machine Learned Dynamics for Robotic Arm – Implemented a Model Predictive Control (MPC) algorithm in Python to direct a 3-link robotic arm to target positions. Achieved precise manipulation under both analytical dynamics and dynamics learned through data-driven, physics-informed Deep Neural Networks (PINNs).
Quadrupedal Robot – Independently built a locomotive robot with 3D-printed parts, servos, and Raspberry Pi. Managed the full development cycle, from concept sketches and CAD to fabrication and Python-based control programming.
Optimal Control Methods Implementation – Employed MATLAB CVX to analyze stability, controllability, and observability on a linearized state-space model for a parallel gripper. Designed and implemented observer-based control, H-infinity control using convex optimization, and a Linear Quadratic Regulator (LQR) for optimal state regulation.

The City College of New York
Finite Element Analysis Project – Studied stress concentration induced by a round notch on a tensile-loaded plate via FEM tool in SolidWorks. Validated St. Venant's principle by varying statically equivalent boundary conditions.
Hydrogen Generator Project – Designed and constructed a hydrolysis-based hydrogen producer with a group of 6.

SKILLS

Technical - MATLAB (5yrs) | SOLIDWORKS (4yrs) | AutoCAD (3yrs) | Python | C++ | Bluebeam | MS Office Suite
Practical - Chinese Mandarin (native) | Mechanical repair and maintenance | Engineering drawings | Gage calibration | Hazardous material handling | Shipboard firefighting and damage control | Basic first aid | Hand sketching

CERTIFICATIONS & HONORS & AWARDS

DOD Secret Clearance, OSHA 10 hr., Navy Achievement Medal, Tau Beta Pi, Phi Theta Kappa, ASME Student Member
Yellow Ribbon Scholarship recipient, Gerard and Doris Lowen Mechanical Engineering Scholarship recipient