Vincent Chendrawan

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Mechanical engineer interested in autonomous systems, designs, vehicle dynamics & control systems; Experienced in data analysis programming languages, simulations, controls, mechanical designs, electronics lab instrumentation, and project management.

EDUCATION

University of California, Berkeley | M. Eng. Mechanical Engineering — August 2022 - May 2023
- *Relevant Coursework: Vehicle Dynamics, Design of Microprocessor, Intro to UAVs, Intro to Robotics* — GPA: TBD

University of California, Los Angeles | B.S. Mechanical Engineering — September 2018 - June 2020
- *Technical Breadth in Technology Management* — GPA: 3.53/4.00

SKILLS

- **Software:** Solidworks, MATLAB, Simulink, ROS, Python, C/C++, LabVIEW, Gazebo, Linux, Windows, HTML/CSS
- **Hardware:** Sensors, CNC Machining, 3D Printing, Arduino, Raspberry Pi, Flight Controller, Actuators

PROJECT EXPERIENCE

Aerial Fire Hose: Team Lead, Hybrid Robotics Lab | Controls Engineer — October 2022 - Present
- Leading a team of 4 to build a remote-controlled two-drone system using a Pixhawk 6C flight controller
- Developing and tuning safety autonomous control algorithms by using PID control and Control Barrier Function (CBF)
- Using ROS framework and Gazebo simulator on Linux to simulate the autonomous flight path with GUI command control
- Utilizing software-in-the-loop (SITL) simulations to investigate and debug codes in Python and C++
- Designed and 3D printed a hose attachment for the drones for flexible movement
- Implementing JIRA to manage tasks and keep track of agile development project management strategy

Path-Planning Turtlebot | Mechatronics Engineer — October 2022 - December 2022
- Collaborated with cross-functional engineers with different backgrounds to debug Python/C++ codes in ROS framework
- Optimized the path-planning using Prim's algorithm to identify trash positions using AR tags, achieving 95% accuracy
- Integrated camera, servo, P control, and IMU to make sure the Turtlebot works properly improving overall stability
- Designed and fabricated a debris pick-up mechanism leveraging 3D CAD technology & 3D printing technique

3D Printed Golf Putter | Mechanical Design Engineer — December 2020
- Designed with Solidworks and 3D printed a custom tailor-made golf putter using PLA-based material, achieving 98% accuracy in putting stroke

Autonomous Vegetable Slicer | Mechanical Engineer — January 2020 - June 2020
- Prototyped an Arduino-controlled vegetable-slicing machine with 4 different cutting plates and designed with Solidworks
- Fabricated electronics housing and components by employing 3D printing, water jet cutting, and laser cutting technologies
- Performed motion study and quantified blade structural, stress, and displacement through Simulink FEA for optimized design
- Conducted feasibility studies and analyzed design options to ensure design robustness and functionality, resulting in a 30% reduction in design change requests and a 20% improvement in design accuracy

Mini Aluminum Chair | Mechanical Engineer — September 2019 - December 2019
- Designed a mini chair using 2D engineering drawings adhering to GD&T and manually machined it using a lathe and a mill
- Prototyped a custom chair seat using CNC programming and machining to cut and drill the seat

Aircraft Boxer-Engine | Mechanical Design Engineer — June 2019 – August 2019
- Performed thermal and structural analysis with FEA in Solidworks to evaluate the robustness and workability of the engine
- Designed 120+ complex parts with 5 sub-assemblies, adhering to GD&T, and archived them into BOM

WORK EXPERIENCE

CNGR Advanced Materials Co., Ltd. | Battery Manufacturer & Mining — **Jakarta, Indonesia**
Financing Officer Intern — March 2022 – July 2022
- Coordinated with legal experts to design tailored agreements for trading company formation in Singapore, cutting costs by 10%
- Negotiated and secured credit facilities from major banks worth $274M including a competitive 3.2% interest rate

PT DBS Group | Shipping, Trading, Heavy Equipment — **Jakarta, Indonesia**
Operation and Technical Manager — April 2021 – February 2022
- Refined vessel utilization optimization procedures while monitoring expenses, resulting in a 15% growth in monthly income
- Created & implemented supply chain strategies with stakeholders to streamline operations and reduce COGS by 10%

PT Gunbuster Nickel Industry | Nickel Mining — **Jakarta, Indonesia**
Operations Staff — September 2020 – April 2021
- Established productive relationships with stakeholders, increasing team cooperation and productivity by 40%
- Generated weekly/quarterly reports and SOP documents while closely tracking budgeting, costing, and scheduling activities to meet project deadlines