Ittiwat Poonprachasin (Jeen)

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Skills

Design & Fabrication: SolidWorks, Siemens NX, AutoCAD, Fusion 360; milling machine, lathe, laser cutting, 3D printing
Hardware & Testing: sensor integration, circuit prototyping and testing, bench-tested serial radios, ECU data analysis (CAN bus), thermal testing (thermistors, data logger)
Simulation: ANSYS CFX (CFD), PreScan ADAS simulation, PipeFlow Expert
Embedded & Electronics: NVIDIA Jetson Orin Nano, Arduino, sensor integration
Programming & Modeling: Python, MATLAB (Vehicle Network Toolbox), Simulink, Git, Linux

Education

University of Washington 09/2026 – Expected 06/2028
M.S. in Technology Innovation, Robotics Track (Computer Science)

- MSTI Merit Scholarship recipient
- Relevant coursework: Prototyping & Fabrication (in progress), Programming for AI (in progress), Sensor & Circuits (planned, Winter 2027), Robotics Lab I (planned, Spring 2027), Machine Learning & Signal Processing (planned, Spring 2027)

Oregon State University (OSU) 09/2018 – 06/2024
B.S. in Mechanical Engineering, Minor in Business

Projects

IoT Door Lock Sensor | *Arduino MKR1010, HC-SR04, Arduino Cloud* 01/2025 – 03/2025

- Designed and built a smart door lock indicator with an Arduino MKR1010, HC-SR04 ultrasonic sensor, and Arduino Cloud, so users can check lock status remotely from a smartphone.
- Resolved voltage-compatibility and battery issues with a voltage divider and wall-powered design; iterated and added an LED indicator after testing and feedback, keeping total cost to ~$51.

Local LLM English-to-Thai Voice Translator | *NVIDIA Jetson Orin Nano, Python, Ollama* 04/2025 – 05/2025

- Built a voice translator on a Jetson Orin Nano using a local LLM (Ollama, gemma3:4b), faster-whisper speech recognition, and pythaitts speech output.
- Wired a USB microphone and speaker to the Jetson and connected each step in Python (record, speech-to-text, translate with the local LLM on the GPU, speak); the whole translation runs offline on the device.

Battery Busbar Thermal Improvement | *Project Owner, OSU Capstone (Formula Student)* 09/2022 – 03/2023

- Built the team's first ANSYS CFX thermal simulation of the 600V battery pack and wrote a setup tutorial so future team members can run it.
- Ran thermal conductivity, specific heat and contact resistance tests (thermistors, data logger) and built a 1:1 airflow mock-up with the car's 48V fans to get real inputs for the simulation.
- Compared three busbar concepts (finned heat sink, copper, 4 mm aluminum) using hand calculations, FMEA and CFD.

Experience

Facil 10/2023 – 05/2026
Application Engineer (Fastener) *On-site at Daimler Truck North America*

- Led a cost-mitigation project after a supplier announced a 25%+ price increase (~$3M) on 238 imperial bolt parts; narrowed the study to the top 10 high-volume 5/8" part numbers and their main applications.
- Found a wire-bracket joint with more capacity than needed (two 5/8" bolts rated for 1,000+ lb holding ~10 lb wire bundles) and worked with a plastics expert on pin-based replacements that keep the existing bracket.
- Built the business case and presented it to Daimler purchasing, then engineering: ~$800K potential savings per year from replacing one bolt with a pin, and up to ~$1.6M from replacing both.
- Directed A/B fastener testing for imperial-to-metric (5/8" to M16) bolt replacements: specified the test data and supplier requirements and coordinated the lab technician who ran the tests, identifying multiple parts that could potentially be replaced.
- Used AI to screen ~1,000 parts in Excel against engineering rules (flagging any length difference over 5 mm), cutting the analysis from ~1.5 months to 2 weeks.

Daimler Truck North America 04/2023 – 09/2023

Mechanical Engineering Intern, Advanced Engineering (Active Safety Team)

- Integrated a camera and six short/long-range radar sensors into a PreScan ADAS simulation by matching beam range, angle, position and frequency settings; also found a .pof export/import method to reuse sensors and vehicles across experiments.
- Built MATLAB data-processing tools (Vehicle Network Toolbox) to batch-convert ECU CAN logs from vehicle tests (.blf) to .mat using a .dbc file and reshape signals into [time, value] arrays for plotting.
- Migrated the team's 300+ script MATLAB library (Mlib) from SVN to Git, fixed MATLAB version errors and rewrote SVN-dependent startup scripts; found a way to run Git commands inside MATLAB and documented installation steps.
- Interfaced two new FreeWave FGR3 serial radios with older units used for GNSS corrections at a proving ground; bench-tested two-way send/receive and documented the settings and software requirements for the team.

Microchip Technology 04/2022 – 09/2022

Facility Engineering Intern

- Completed 5 tool installation design packages for new semiconductor fabrication tools; all were issued for construction and awarded to contractors.
- Modeled the process nitrogen piping in PipeFlow Expert to check pressure drop and pick the connection point for a new tool using 1,845 standard liters per minute.
- Selected and purchased an Airdata multimeter for exhaust flow measurement, wrote the operating manual and trained the facility engineers, reducing reliance on contractors.

Leadership

Association of Thai Students in America (ATSA) 08/2021 – 08/2022

Director of Programming (Events) and Career Fair Co-Lead

- Took over the organization's first career fair for Thai students across the U.S. after the lead stepped down about 10 weeks before the event, and ran it with one co-lead: 150 attendees, 16 sponsors and $7,000+ raised.
- Avoided a $3,000+ event platform by building the virtual stage on Zoom accounts for $151.63. Received the organization's MVP award.

Thai Student Association, Oregon State University 09/2020 – 04/2022

President

- Revived the annual Thai Cultural Night after an 8-year gap and sold out all 200 tickets.

Additional Experience

Oregon State University, Design Engineering Lab 03/2023 – 06/2023

Research Assistant

- Wrote a MATLAB script to locate and organize 52,000+ CAD files used to train and validate a deep-learning model for a conference paper on automated functional modeling of 3D models.

Product Design Competition, Oregon State University 02/2022

Product Design & Research (College of Engineering and College of Business)

- Co-led the design and research of a virtual reality exposure therapy concept to support anxiety disorder treatment; pitched it and won 2nd place.

Oregon State University, SolidWorks 3D Modeling Class 06/2020 – 08/2020

Teaching Assistant

- Helped a professor grade student assignments, including 3D CAD models of mechanical watches and TV remotes.
- Gave students step-by-step modeling walkthroughs so they could build the objects on their own.