Trontour H. Wang

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SUMMARY

Cornell Presidential Research Scholar and software engineer with strong critical thinking, problem solving, and rapid learning abilities. Experienced in ROS 2 pipelines, multimodal perception, policy/LLM integration, web UIs, and APIs.

EDUCATION

Cornell University - Rawlings Cornell Presidential Research Scholar **Ithaca, New York**
B.A. in Computer Science - Cumulative GPA: 4.0 Expected Graduation, May 2027

- **Concentrations:** Computer Science, Artificial Intelligence, Robotics, Applied Economics
- **Relevant Courses:** Data Structures, OOP, Functional Programming, Discrete Mathematics, Linear Algebra

Thomas Jefferson HS for Science and Technology (Former #1 Public STEM HS in America) **Alexandria, Virginia**
Computer Science Graduated Jun 2024

- **Relevant Courses:** Artificial Intelligence 1 & 2, Computer Vision, Robotics, AP Computer Science A (5), AP Statistics (5)

EXPERIENCE

HRC^2 Research Lab (Cornell Human-Robot Collaboration & Companionship) - Website: hrc2.io **Ithaca, New York**
Robotics Software Engineer, Robot Foundation Model | ROS 2, π_0, Python, Kinova Arm Jul 2025 – Present

- Integrated **π_0 generalist AI robot foundation model** with Kinova Gen3 robotic arm using **ROS 2.**
- Improved success **50% → 90% (n=100)** on a **trash-sorting** benchmark while cutting task completion time **2 min → 1 min** via **policy fine-tuning** on custom high-quality **rosbag2** datasets (dual RealSense cameras + Kinova Gen3 arm topics).
- Containerized the robotics stack (ROS 2, π_0 policy, drivers) for **one-command,** reproducible bring-up across machines.

Robotics Software Engineer, Robot Garden Project | ROS 2, Python, OpenCV, MediaPipe, Linux Feb 2025 – Jul 2025

- Built a **multimodal AI framework** that infers human intent from nonverbal cues by converting live video into structured text prompts for an LLM, enabling collaborative garden design with a **Kinova Gen3** robotic arm.
- Engineered a real-time object and hand detection system **(OpenCV + Google MediaPipe + ROS 2)** sustaining **60 FPS.**
- Cut perception-stack latency **120 ms → 40 ms** via **multithreaded pipelining** and **latest-frame policy** (drops stale frames).
- Delivered **7** ROS 2 nodes + **3** launch configurations, cutting demo setup time from **~8 min → 30 s** (93% reduction).

Entagile **Fairfax, Virginia**
Software Developer Intern | Python, Selenium, HTML, CSS, MySQL Jun 2024 – Aug 2025

- Built **automated resume-scraping/ingestion pipelines** (Python + Selenium) with retries/backoff and structured extraction; normalized skills/titles/locations/education/experience into a clean schema.
- Designed a **MySQL schema** (indexes, constraints, stored routines) delivering **<2 s** candidate searches under realistic load.
- Developed a search web UI (HTML/CSS/JS) with **faceted filters** and **Boolean queries** (AND/OR/NOT, quoted phrases), plus **typeahead** and **keyword highlighting**—reducing manual resume screening for recruiters.

PROJECTS

Unity Game Development (Kanji Katana) **Alexandria, Virginia**
Developer | C#, Unity, Python Aug 2023 – Jul 2024

- Developed a 3D Japanese language learning game with custom animations, textures, and mechanics (200+ hours).
- Integrated **MangaOCR (Vision Encoder Decoder AI Model)** for real time handwriting recognition.
- Designed a **Python** back-end server to process game inputs, reduced input-to-feedback latency **1 s → 250 ms.**

CNN Malaria Infected Cell Detection **Alexandria, Virginia**
Developer | TensorFlow, NumPy, Pandas Jul 2024

- Built a **Convolutional Neural Network** trained on **27.6k images** that identifies malaria-infected cells with **97% accuracy.**

INTERNATIONAL COMPETITIONS & ACTIVITIES

Blue Ocean Entrepreneurship Competition — 3rd Place (Winners page: tinyurl.com/5aatpxzd) Aug 2022 – Apr 2023

- Led a team of 5 in the largest high school entrepreneurship competition in the world in 2023, won 3rd. (5209 participants, 1700 schools, 146 countries, 46 states).

2023 Bowseat Ocean Awareness Competition — 2nd Place (Video: tinyurl.com/2mmn39dw) Jun 2023 – Aug 2023

- Created a documentary for the world's largest environmental youth program for the creative arts, won 2nd.

Extracurricular Activities: Cornell Taiko Drum Team (10hr/wk), Rock Climbing, Badminton, Skiing, Video Editing.

SKILLS

Languages: Python, C++, Java, JavaScript, C#, OCaml, SQL, HTML/CSS
ML/CV: PyTorch, TensorFlow, Keras, OpenCV, MediaPipe, NumPy, Pandas
Robotics/Systems: ROS, ROS 2, rosbag2, RealSense SDK, Kinova/Kortex API, Docker/Compose, Linux, Git, Selenium, MySQL