

Ying Chieh Wang

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Summary

M.S. student at The University of Osaka with experience in machine learning, Python backend development, and independently published Android applications. First author of an IEEE SmartComp 2026 paper on simulation-accelerated light-pollution prediction. Experienced in turning research and product ideas into working systems, from data and API design to implementation, testing, and application release.

Education

The University of Osaka <i>M.S. in Information Networking</i> Graduate School of Information Science and Technology	Apr. 2026 – Mar. 2028 (Expected) <i>Osaka, Japan</i>
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The University of Osaka <i>B.S. in Information Science</i> School of Engineering Science	Apr. 2022 – Mar. 2026 <i>Osaka, Japan</i>
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Technical Skills

Programming: Python, C++, Dart, SQL, TypeScript, JavaScript, C, Java, Assembly

Machine Learning & Data: PyTorch, NumPy, pandas, 3D-CNNs, MLPs, surrogate modeling, reinforcement learning

Frameworks & Databases: FastAPI, Flask, Flutter, React; SQLite, SQLCipher, DynamoDB

Cloud & Tools: AWS (Lambda, EC2, ECS, S3, API Gateway, CloudFront), Docker, Git, Linux, Unreal Engine 5

AI-assisted Development: OpenAI Codex, Claude, ChatGPT, Gemini; implementation, debugging, code review, and refactoring, with independent review and testing of generated changes

Research Experience

The University of Osaka – Yamaguchi Laboratory <i>Undergraduate / Graduate Researcher</i>	Apr. 2025 – Present <i>Osaka, Japan</i>
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- Develop fast prediction methods for sunlight reflected by Urban Air Mobility (UAM) aircraft, supporting city-scale light-pollution assessment in urban digital twins.
- Designed a hybrid predictor combining a PyTorch 3D-CNN/MLP surrogate with cached geometric occlusion correction; built the simulation and evaluation pipeline using Unreal Engine 5, C++, and Python.
- In the journal extension, reduced RMSE by 10–54% versus raw neural predictions across 18 settings in Rome, Taipei, and New York, using city-specific calibration and occlusion correction.
- Reduced evaluation time for 10,000 observation points over a five-second window from over 3 hours to 1.62 seconds, excluding one-time city initialization.

Publications & Research Recognition

- Ying Chieh Wang, Tatsuya Amano, and Hirozumi Yamaguchi. *A Simulation-based Framework for Dynamic Light Pollution Prediction in Urban Air Mobility*. IEEE SmartComp 2026, pp. 136–143. Published. DOI: 10.1109/SmartComp69968.2026.00029.
- Ying Chieh Wang, Tatsuya Amano, and Hirozumi Yamaguchi. *Surrogate-Based Dynamic Risk Mapping of Light Pollution for Urban Air Mobility*. IPSJ SIG Technical Report, Vol. 2026-ITS-105, No. 38, pp. 1–8, May 2026. Encouragement Presentation Award.
- Ying Chieh Wang, Tatsuya Amano, and Hirozumi Yamaguchi. *A Geometry-Aware Neural Surrogate for City-Scale Simulation of Light Pollution from Urban Air Mobility*. Journal of Information Processing. Under review.
- Ying Chieh Wang, Tatsuya Amano, and Hirozumi Yamaguchi. *A Real-Time Urban Air Mobility Simulator Using a Ray-Tracing Surrogate Model*. DPSWS 2026, demo/poster paper. Accepted; camera-ready submitted.

Industry Experience

Stanby, Inc.

Aug. 18–21, 2026

Engineering Intern – Four-day Hackathon

Japan

- Proposed an auto-apply feature that applies to popular, fast-closing jobs matching a member's saved preferences, giving users a clearer reason to register; built a working prototype in a five-person team.
- Designed the system architecture and implemented the Python backend and SQLite database for managing user preferences and application workflows.
- Coordinated API interfaces and helped integrate the Nuxt frontend, prioritizing an operable end-to-end demo within four days.

PKSHA Technology

Sep. 2024

Software Engineering Intern – Two-week Program

Tokyo, Japan

- Co-developed a Slack application in a four-person team to surface valuable posts that would otherwise be buried in the message stream.
- Built a Python workflow using AWS Lambda and EventBridge to aggregate weekly reactions, rank posts, and publish LLM-generated summaries through Slack and Azure AI APIs.
- Contributed architecture proposals and technology selection, reviewed code, and supported teammates in completing and presenting a working tool.

H&K Inc.

Dec. 2023 – May 2024

Software Engineering Intern – Part-time

Japan

- Developed a HubSpot–fincode integration to send payment links and synchronize payment status, designed to reduce manual information transfer and tracking.
- Implemented backend services, authentication, API integration, and error handling using Python, Flask, and AWS Lambda, based on the supervisor's initial design.
- Identified a nine-hour timestamp mismatch during integration testing by investigating inconsistent time references between services.

Selected Projects

Wiser Locker – Private Media Organization

Feb. 2025 – Present

Independent Developer; published on Google Play

Google Play | Website

- Built an Android app to address two needs: protecting private photos and videos, and organizing media that belongs to multiple categories.
- Designed multi-tag organization and saved filters, allowing users to find the same media through different themes rather than a single folder hierarchy.
- Combined on-device encryption, biometric authentication, and secure key storage with background processing and lazy loading for responsive media browsing.
- Own product planning, UI/UX, data design, implementation, testing, Google Play release, and ongoing improvements.

FoodList – Household Food Management

Jul. 2023 – Present

Independent Developer; published on Google Play

Google Play | GitHub

- About 60% of global food waste occurs in households (UNEP, 2024), often because people forget what they have and when it expires; built an offline-first Android app that keeps track of ingredients and expiration dates.
- Designed color-coded expiration status and background reminders so users know what to use first, with multilingual support.
- Own product planning, design, implementation, Google Play release, and maintenance.

Languages

Mandarin Chinese (Native) | Taiwanese (Native) | Japanese: JLPT N1 (Dec. 2019) | English: TOEIC L&R 940 (Jul. 2024)