

# Alex Yen

---

(978)-844-7254 | [alyen@ucsd.edu](mailto:alyen@ucsd.edu) | <https://www.alexlwyen.com/>

## EDUCATION

---

- University of California San Diego**, San Diego, CA [Mar. 2026]  
Ph.D. in Computer Science  
Advisor: Pat Pannuto
- University of California San Diego**, San Diego, CA [Mar. 2023]  
M.S. in Computer Science  
Advisor: Pat Pannuto
- University of Massachusetts, Amherst**, Amherst, MA [May 2020]  
B.S. in Computer Engineering, *Summa Cum Laude*  
Honors Thesis Advisor: Jay Taneja

## AWARDS AND HONORS

---

- National Science Foundation Graduate Research Fellowship [Apr. 2022]  
UMass Amherst ECE Award of Excellence (3%) [May 2020]  
Best Paper Nominee, BuildSys'19 [Nov. 2019]  
UMass Amherst Commonwealth Honors College: Honors Research Grant [Mar. 2018]

## INDUSTRY EXPERIENCE

---

- Research Intern at T-Mobile (Technology Team)** [Jun. 2024—Sept. 2024]
- Designed data collection and analysis pipelines on AirTag Bluetooth advertisements, reverse engineering AirTag RF behavior for future wireless application opportunities at T-Mobile
  - Automated website static scraping of airplane ADS-B data for novel large scale simulation analysis
  - Accelerated onboarding into 5G NR evaluation workflows, collaborating with team members to report (un)expected network quality via Key Performance Indicators

## RESEARCH AND TECHNICAL PROJECTS

---

- LoRa Wide-Area Wireless Broadcasting via Aerial Vehicles** [Jul. 2024—Aug. 2025]
- Prototyped, developed, and deployed wireless transmitters on balloons and airplanes, validating unprecedented wireless coverage at massive-scale (i.e., >56,000 square miles)
  - Navigated and modified an industry-scale codebase to implement firmware-level TX power control in C/Arduino, enabling signal range versus energy tradeoff evaluation at runtime
  - Developed country-scale wireless-coverage-mapping simulations through fusion of multiple GB-scale datasets, showcasing expertise in integrating heterogeneous data sources
  - Implemented data pruning, batching, and parallelization, yielding more than **10x** processing speedup
  - Engineered and 3D-printed custom enclosures for wireless communication boards at deployment

## Imaging Grid-Powered Lights to Monitor Grid Power Quality [May 2018—Sep. 2023]

- Led data collection, model training, and model evaluation on a supervised learning framework, achieving  $\sim 90\%$  classification performance on noisy, tightly clustered, real-world data
- Improved model reliability under limited-data conditions by applying k-fold cross-validation, enabling reliable model generalization and model robustness
- Built and maintained a large-scale multi-view geometry and computer vision codebase, focusing on robust feature geolocation and achieving sub-5-meter best-case accuracy

## CONFERENCE PUBLICATIONS

---

1. **Alex Yen**, Zeal Shah, Ben Ochoa, Pat Pannuto, and Jay Taneja. “EffiSenseSee: Towards Classifying Light Bulb Types and Energy Efficiency with Camera-Based Sensing.” In the 9th ACM International Conference on Systems for Energy-Efficient Built Environments, Cities, and Transportation (BuildSys’22), November 2022.
2. Dhananjay Jagtap\*, **Alex Yen\***, Huanlei Wu, Aaron Schulman, and Pat Pannuto. 2021. Federated Infrastructure: Usage, Patterns, and Insights from “The People’s Network”. In ACM Internet Measurement Conference (IMC ’21), November 2021.
3. Zeal Shah, **Alex Yen**, Ajey Pandey, and Jay Taneja. “GridInSight: Monitoring Electricity Using Visible Lights.” In the 6th ACM International Conference on Systems for Energy-Efficient Built Environments, Cities, and Transportation (BuildSys’19), November 2019. **Best Paper Nominee.**

## WORKSHOP PUBLICATIONS

---

1. Alex Bellon, **Alex Yen**, and Pat Pannuto. 2023. TagAlong: Free, Wide-Area Data-Muling and Services. In The 24th International Workshop on Mobile Computing Systems and Applications (HotMobile ’23), February 22–23, 2023, Newport Beach, CA, USA.
2. **Alex Yen**, Bryse Flowers, Wenshan Luo, Nitish Nagesh, Peter Tueller, Ryan Kastner, and Pat Pannuto. 2021. A UCSD view on replication and reproducibility for CPS & IoT. In Proceedings of the Workshop on Benchmarking Cyber-Physical Systems and Internet of Things (CPS-IoTBench ’21), May 2021.

## POSTERS AND DEMOS

---

1. Alex Bellon, **Alex Yen**, and Pat Pannuto. 2023. TagAlong: Free, Wide-Area Data-Muling and Services. In The 24th International Workshop on Mobile Computing Systems and Applications (HotMobile ’23), February 22–23, 2023, Newport Beach, CA, USA.
2. Alex Bellon, **Alex Yen**, Pat Pannuto. “TagAlong: A Free, Wide-Area Data-Muling Service Built on the AirTag Protocol.” In the 20th ACM Conference on Embedded Networked Sensor Systems (SenSys’22), November, 2022.
3. Zeal Shah, **Alex Yen**, Ajey Pandey, Jay Taneja. “GridInSight: Monitoring Electricity Using Visible Lights.” In the 2nd Annual ACM SIGCAS Conference on Computing and Sustainable Societies (COMPASS’19), July 2019.

## SERVICE AND LEADERSHIP

---

UCSD CSE NSF GRFP Workshop, Lead Organizer

[Aug. 2022—Oct. 2024]

- Awarded the fellowship in 2022, and collaborated with 3-4 grad students to assist other student' applications with the vision of empowering and giving back to the community
- Assisted three awardees in 2025—an exceptionally competitive year—by meticulously editing dozens of essay iterations while adapting and persevering through an unsuccessful outcome in 2024