Soto Anno (安納 爽響)

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Research Interests

- **Data-driven understanding of cities, e.g., urban dynamics, human mobility, and city's atmosphere**
- **Analyzing big data such as GPS-based mobility logs, histories of web search session or train transit**
- **Pursuing machine learning / deep learning technique and computer vision methodology**

Funding Sources

- Research Fellowship for Young Scientists (DC1), JSPS. 2022.4 – 2025.3 (link)

Publication

Note: For the full list of publications, please see my web site.

International Journals (refereed):

- **Soto Anno**, Kota Tsubouchi, and Masamichi Shimosaka, "Forecasting Lifespan of Crowded Events With Acoustic Synthesis-Inspired Segmental Long Short-Term Memory," in IEEE Access, vol. 12, pp. 87309-87322, 2024, doi: 10.1109/ACCESS.2024.3417509.
- **Soto Anno**, Kota Tsubouchi, and Masamichi Shimosaka, "CityOutlook+: Early Crowd Dynamics Forecast Through Unbiased Regression With Importance-Based Synthetic Oversampling" in IEEE Pervasive Computing, vol. 22, no. 04, pp. 26-34, 2023. doi: 10.1109/MPRV.2023.3312652.

International Conferences (refereed):

- **Soto Anno**, Dario Tenore, Kota Tsubouchi, and Masamichi Shimosaka. Are Crowded Events Forecastable from Promotional Announcements with Large Language Models?. In Proceedings of the 32nd ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL GIS 2024), Atlanta, GA, USA, Oct. 29 - Nov. 1. 2024
- **Soto Anno**, Kota Tsubouchi, and Masamichi Shimosaka. Congestion Forecast for Trains with Railroad-Graph-based Semi-Supervised Learning using Sparse Passenger Reports. In Proceedings of the 32nd ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL GIS 2024), Atlanta, GA, USA, Oct. 29 - Nov. 1. 2024.
- **Soto Anno**, Kota Tsubouchi, and Masamichi Shimosaka. CityOutlook: Early Crowd Dynamics Forecast towards Irregular Events Detection with Synthetically Unbiased Regression. In Proceedings of the 29th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL GIS 2021), Seattle, WA, USA, 2-5 Nov. 2021.
- **Soto Anno**, Kota Tsubouchi, and Masamichi Shimosaka. Supervised-CityProphet: Towards accurate anomalous crowd prediction. In Proceedings of the 28th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL GIS 2020),

Seattle, WA, USA, 3-6 Nov. 2020.

- **Soto Anno** and Yuichi Sasaki. "GAN-based abnormal detection by recognizing ungeneratable patterns", Asian Conference on Pattern Recognition (ACPR) 2019, Auckland, New Zealand, 26-29 Nov. 2019.

Awards

- IPSJ Yamashita SIG Research Award 2024, 7, 2024
- Student paper award at IPSJ-SIGUBI 82nd Workshop, 5, 2024
- Excellent paper award at IPSJ-SIGUBI 80th Workshop, 11, 2023
- Excellent paper award at IPSJ-SIGUBI 78th Workshop, 6, 2023
- Student paper award at IPSJ-SIGUBI 78th Workshop, 6, 2023
- Best presentation award at TAC-MI International Forum, 12, 2022
- Student paper award at IPSJ-SIGUBI 66th Workshop, 6, 2020

Education

Doctor of Engineering, April 2022 – March 2025 (expected).

- Graduate School of Computing, Tokyo Institute of Technology, Japan
- Research field: Urban Dynamics Analysis, Urban Computing, Big Data Analysis
- Adviser: Prof. Masamichi Shimosaka

Master of Engineering, April 2020 – March 2022.

- Graduate School of Computing, Tokyo Institute of Technology, Japan
- Research field: Urban Dynamics Analysis, Urban Computing, Big Data Analysis
- Adviser: Prof. Masamichi Shimosaka

Bachelor of Engineering, April 2017 – March 2020. (1-year earlier graduation)

- Undergraduate School of Computing, Tokyo Institute of Technology, Japan
- Research field of the bachelor thesis: Urban Dynamics Analysis, Big Data Analysis
- Adviser: Prof. Masamichi Shimosaka

Utsunomiya High School, Tochigi, Japan, April 2014 – March 2017.

Work Experiences / Internships

Research Internship **(Sep. 2020 – Mar. 2024)**

Yahoo! JAPAN Research, Japan.

- Developing methods to forecast train congestion with passenger reports (The corresponding paper was accepted in ACM SIGSPATIAL 2024. See the publication section).

AI Engineering Internship **(Apr. 2019 – Mar. 2022)**

Neural Pocket Inc, Japan.

- Developing abnormal detection system based on Generative Adversarial Nets and writing a paper. (The corresponding paper was accepted in ACPR 2019. See the publication section.)
- Develop a system to automatically recognize and learn car's license plates on active learning

manner.

AI Engineering Internship **(Aug. 2018 – Mar. 2022)**
AIQ Co., LTD., Japan

- Developing a model to recognize fashion trends from images
- Analyzing sensor data for improving living environment with a real estate company

Qualifications / Skills

- Machine Learning Skills (please see my past research)
- Programming Skills of Scala, Java, Python, etc.
- 5.5 years of experience in large dataset analysis (e.g., GPS data)
- TOEFL PBT 540 (2018)