

# Alben Rome B. Bagabaldo

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## RESEARCH INTERESTS

Urban Mobility  
Digital Twin Modeling  
Intelligent Transportation Systems  
Network Science  
Human-Centered Mobility and Safety

## EDUCATION

- Ph.D. Civil and Environmental Engineering, University of California, Berkeley, August 2024  
Labs: Mobile Sensing Lab & HumNet Lab  
Dissertation: “Navigating Urban Traffic: From Data to Simulations to Real-World Impacts”  
Adviser: Prof. Alexandre M. Bayen; Committee: Assoc. Prof. Marta C. Gonzalez, Prof. Joan Walker
- M.S. Civil Engineering (Transportation Engineering), Mapúa University, August 2016  
Thesis: “Determination of Barriers towards Addressing Mobility and Accessibility through Traffic Simulation: Case of Intramuros, Manila”
- B.S. Civil Engineering (cum laude), Southern Luzon State University, March 2012

## EXPERIENCE

- 2024– Princeton University  
Postdoctoral Research Associate, Complex Infrastructure Systems Group (with Prof. Jürgen Hackl)
- 2019–24 University of California, Berkeley  
Graduate Student Instructor (GSI) for multiple courses  
Reader for IE 242 – Applications in Data Analysis  
Research Mentor for undergraduate and graduate students
- 2016–19 Mapúa University, Manila  
Instructor/Lecturer, Faculty Member, and Program Chair (Construction Engineering Management)
- 2013–14 Southern Luzon State University, Lucban  
Contract of Service Instructor, Department of Civil Engineering

## PUBLICATIONS

### Journal Articles

- 2024 A. Bagabaldo, Q. Gan, A. Bayen, M. Gonzalez. “Impact of Navigation Apps on Congestion and Spread Dynamics on a Transportation Network.” *Data Science for Transportation*.  
doi:10.1007/s42421-024-00099-w

- 2022 F.-C. Chou, A. Bagabaldo, A. Bayen. "The Lord of the Ring Road: A Review and Evaluation of Autonomous Control Policies for Traffic in a Ring Road." *ACM Trans. on Cyber-Physical Systems*. doi:10.1145/3494577
- 2017 A. Bagabaldo, J. Anosa, J. Gapusan, K. Soriano, F. Uy, R. Bacero. "Determining the Potential Effects of the Proposed Removal of South Provincial Buses along EDSA Using Commuters' Perception." *Journal of the Eastern Asia Society for Transportation Studies*. doi:10.11175/easts.12.489

### Conference Proceedings

- 2025 A. Bagabaldo & J. Hackl. "Improving Pedestrian Safety at Intersections Using Probabilistic Models and Monte Carlo Simulations." *International Conference on Transportation and Development* (Oral, accepted). Preprint: arXiv:2503.07805
- 2022 A. Bagabaldo & M. Gonzalez. "Predicting Traffic Flow on Faulty Traffic Detectors Using Machine Learning Techniques." *International Conference on Transportation and Development*. doi:10.1061/9780784484319.019

## CONFERENCE PRESENTATIONS/INVITED TALKS

### Conference Presentations

- 2023 A. Bagabaldo. "Price of Information and the Spread of Congestion." Oral presentation at ASCE International Conference on Transportation and Development.
- 2023 A. Bagabaldo. "Research Highlights for PhD Students." Panel speaker at ASCE International Conference on Transportation and Development.
- 2023 T. Cabannes, A. Bagabaldo, J. Lee, Q. Gan, A. Jain, A. Blondel, A. Bayen. "Creating, Calibrating, and Validating Large-Scale Microscopic Traffic Simulation." *Transportation Research Board 102nd Annual Meeting*. TRB 2023

### Invited Talks

- 2017 A. Bagabaldo. "Media Interview – The Service Road by James Deakin." CNN Philippines, May 31, 2017.

## GRANTS AND AWARDS

### Awards and Honors

- 2024 Outstanding Graduate Student Instructor (GSI) Award, UC Berkeley
- 2019–23 Ph.D. Overseas Scholarship, Commission on Higher Education – Philippine California Advanced Research Institutes
- 2016 Dean's Council Scholarship, Mapúa University
- 2016 JSCE Study Tour Grant, Japan Society of Civil Engineers
- 2016 Young Future Energy Leaders, Masdar Institute

## COURSES TAUGHT

### University of California, Berkeley

PHYSICS 8A – Introductory Physics (Spring 2024, Summer 2023)

CE C263H/CP C257H – Human Mobility and Network Science (Fall 2023)

CE 295 – Data Science for Energy (Spring 2023, Fall 2021)

CE 263N/CP 257 – Scalable Spatial Analytics/Data Science for Human Mobility and Socio-technical Systems (Fall 2022)

CE 259 – Public Transportation Systems (Spring 2022)

CE C88/CP C88 – Data Science for Smart Cities (Spring 2021)

Reader for IE 242 – Applications in Data Analysis (Fall 2019, Spring 2020, Fall 2020, Spring 2021, Fall 2021)

### **Mapúa University**

Undergraduate courses in Methods of Research, Transportation Engineering, Engineering Economy, etc.

Supervision of undergraduate theses

### **Southern Luzon State University**

Courses in Traffic Engineering, Soil Mechanics, and Fluid Mechanics

## **SERVICE**

### **Leadership and Referee Service**

2023–24 Vice President & Founding Member, Representation of Asian and Pacific Islanders in the Department of Civil and Environmental Engineering (RAPID-CEE), UC Berkeley

2016–18 Faculty Adviser, Transportation Science Society of the Philippines – Mapúa Student Chapter

2010–11 Vice President, College of Engineering – Student Council, Southern Luzon State University

2023, 2024 Referee for Transportation Research Board Annual Meeting and IEEE ITS Conferences

## **MEMBERSHIPS**

Eastern Asia Society for Transportation Studies (Regular Member)

Japan Society of Civil Engineers (Associate Member)

American Society of Civil Engineers (Student Member)

Transportation Science Society of the Philippines (Regular Member)

Updated March 2025