Prashanth S. Venkataram (PSV)

Curriculum Vitae

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Education

- **Princeton University** — Princeton, NJ
  M.A. 2016, Ph.D. 2020 (GPA: 4.0/4) — *2014 September – 2020 June*
  - Electrical Engineering (advisor: Alejandro W. Rodriguez)
  - Thesis: Scattering Theory in Fluctuational Electromagnetics at the Nanoscale: From Numerical Methods to Fundamental Limits
- **Massachusetts Institute of Technology** — Cambridge, MA
  S.B. 2014 (GPA: 4.9/5) — *2010 September – 2014 June*
  - Major: Physics (Focused Option, advisor: Jesse D. Thaler), Minor: Economics
  - Thesis: Computational Investigations of Nanophotonic Systems (advisor: Marin Soljačić)

Work Experience

- **Cambridge Systematics** — Bethesda, MD
  Analyst — *2024 July – [present]*
- **National Council on Disability** — Bethesda, MD
  Contract Researcher — *2024 July – 2024 September*
- **University of California, Davis** — Davis, CA
  Postdoctoral Researcher — *2020 September – 2024 June*

Academic Research Grants (all as Principal Investigator)

- UC Statewide Transportation Research Program (2023 October – 2024 September)
- Caltrans/Pacific Southwest Region (2023 July – 2024 June)
- UC Statewide Transportation Research Program (2022 October – 2023 September)
- US DOT/Caltrans/Pacific Southwest Region (2021 October – 2022 September)

Journal Publications

- **PSV**, J. A. Flynn, M. M. R. Bhuiya, J. M. Barajas, and S. Handy, "Availability and usability of transportation for people with disabilities depending on what the user is expected to do", Transp. Res. Interdisc. Persp. **23** (2024)
- **PSV**, J. A. Flynn, M. M. R. Bhuiya, J. M. Barajas, and S. Handy, "Framing availability and usability of transportation for people with disabilities", Transp. Res. Interdisc. Persp. **22** (2023)
- J. A. Flynn, G. Circella, and **PSV**, "Transportation and Neighborhood Priorities of Californians with Disabilities: Focus Group Findings", Transp. Res. Rec. **0**, 0 (2023)
- H. C. Wuellner, B. Baek, **PSV**, and M. C. D'Agostino, "Transportation Network Companies and Accessibility Under the ADA & Other Pathways to Transportation Equity", UC Davis Soc. Justice Law Rev. **27**, 2, 205-233 (2023)
- S.-A. Biehs, R. Messina, **PSV**, A. W. Rodriguez, J. C. Cuevas, and P. Ben-Abdallah, "Near-field Radiative Heat Transfer in Many-Body Systems", Rev. Mod. Phys. **93**, 025009 (2021)
- **PSV**, S. Molesky, J. C. Cuevas, and A. W. Rodriguez, "Channel-based algebraic limits to conductive heat transfer", Phys. Rev. B **102**, 085405 (2020)

- **PSV**, R. Messina, J. C. Cuevas, P. Ben-Abdallah, and A. W. Rodriguez, "Mechanical relations between conductive and radiative heat transfer", Phys. Rev. B **102**, 085404 (2020)
- **PSV**, J. Hermann, A. Tkatchenko, and A. W. Rodriguez, "Fluctuational electrodynamics in atomic and macroscopic systems: van der Waals interactions and radiative heat transfer", Phys. Rev. B **102**, 085403 (2020)
- **PSV**, S. Molesky, P. Chao, and A. W. Rodriguez, "Fundamental limits to attractive and repulsive Casimir–Polder forces", Phys. Rev. A **101**, 052115 (2020)
- **PSV**, S. Molesky, W. Jin, and A. W. Rodriguez, "Fundamental Limits to Radiative Heat Transfer: The Limited Role of Nanostructuring in the Near-Field", Phys. Rev. Lett. **124**, 013904 (2020)
- S. Molesky*, **PSV***, W. Jin, and A. W. Rodriguez, "Fundamental limits to radiative heat transfer: Theory", Phys. Rev. B **101**, 035408 (2020) *equal contributions
- S. Molesky, W. Jin, **PSV**, and A. W. Rodriguez, "**T** Operator Bounds on Angle-Integrated Absorption and Thermal Radiation for Arbitrary Objects", Phys. Rev. Lett. **122**, 257401 (2019)
- **PSV**, J. Hermann, T. J. Vongkovit, A. Tkatchenko, and A. W. Rodriguez, "Impact of Nuclear Vibrations on van der Waals and Casimir Interactions at Zero and Finite Temperature", Sci. Adv. **5**, eaaw0456 (2019)
- **PSV**, J. Hermann, A. Tkatchenko, and A. W. Rodriguez, "Phonon-Polariton Mediated Thermal Radiation and Heat Transfer among Molecules and Macroscopic Bodies: Nonlocal Electromagnetic Response at Mesoscopic Scales", Phys. Rev. Lett. **121**, 045901 (2018)
- **PSV**, J. Hermann, A. Tkatchenko, and A. W. Rodriguez, "Unifying Microscopic and Continuum Treatments of van der Waals and Casimir Interactions", Phys. Rev. Lett. **118**, 266802 (2017)
- **PSV**, J. D. Whitton, and A. W. Rodriguez, "Nonadditivity of van der Waals forces on liquid surfaces", Phys. Rev. E **94**, 030801(R) (2016)

Presentations

- M. M. R. Bhuiya, J. Barajas, and **PSV**, "How Does Disability Influence Extent of Visit to AcHvity Centers?", ACSP 2025 Annual Conference
- A. Cochran, R. Basu, **PSV**, and M. Shirgaokar, "Investigating Heat Exposure for Paratransit Users in the Denver Metropolitan Region.", ACSP 2025 Annual Conference
- **PSV**, "Simpleton in Social Justice: Critically Examining My Path to and through Transportation Research", 3x3 2024 December (Invited)
- M. M. R. Bhuiya, Flynn, G. Circella, and **PSV**, "Multimodality and Disability: A Study from California", TRB CATE 2024
- J. A. Flynn, G. Circella, and **PSV**, "Exclusion from Activities and Transportation Modes by Disability and Income: Results from a Survey in California", TRB 2024 Annual Meeting
- **PSV**, "Disability and Vision Zero in the US: A Researcher's Perspective", Vision Zero Cities 2023 (Invited)
- **PSV**, "Disability, Transportation, and Accessibility: New Trends and Longstanding Challenges in the US", UC Berkeley Institute of Transportation Studies 2023 February (Invited)
- J. A. Flynn, G. Circella, and **PSV**, "Transportation and Neighborhood Priorities of Californians with Disabilities: Focus Group Findings", TRB 2023 Annual Meeting

- **PSV**, "Transportation Challenges facing Adults with Disabilities in California", Future Mobility, Automation, and Transit Research 2022 Workshop (Invited)
- **PSV**, "Disability and Physics Laboratories", CU Boulder Physics Education Research 2022 November (Invited)
- **PSV**, "Transportation Challenges facing Adults with Disabilities in California", TRANSED 2022
- **PSV**, "Disability and Latent Demand for Transportation in California", Caltrans Planning Horizons 2022
- **PSV**, G. Circella, A. L. Brown, and D. Sperling, "Micro- and Macro-accessibility in Transportation for People with Disabilities", TRB 2022 Annual Meeting
- **PSV**, "Universal Design and Mobility", Asilomar 2021 Conference 3 Revolutions Side Event (Invited)
- **PSV**, S. Molesky, W. Jin, and A. W. Rodriguez, "Approaching the fundamental limits of heat transfer at the nanoscale: the surprisingly limited role of inverse design", META 2019 (Invited)
- **PSV**, "Mesoscale fluctuational electrodynamics: modeling and bounds, from molecules to continuous media", Université du Luxembourg 2019 July (Invited)
- **PSV**, J. Hermann, T. J. Vongkovit, A. Tkatchenko, and A. W. Rodriguez, "Impact of nuclear vibrations on van der Waals interactions and radiative heat transfer in graphene", APS 2019 March Meeting
- **PSV**, J. Hermann, A. Tkatchenko, and A. W. Rodriguez, "Van der Waals Interactions and Radiative Thermal Energy Exchange among Molecules and Macroscopic Bodies", APS 2018 March Meeting
- **PSV**, J. Hermann, A. Tkatchenko, and A. W. Rodriguez, "Unifying Microscopic and Continuum Treatments of van der Waals and Casimir Interactions", APS 2017 March Meeting

Reports and Policy Briefs

- (**PSV** as acknowledged contributor) "Ground Transportation for People with Mobility Disabilities 2025: Challenges and Progress", National Council on Disability report (2025)
- M. M. R. Bhuiya, J. M. Barajas, and **PSV**, "After the Crash: Post-Collision Travel Behavior and Safety Perceptions", University of California Institute of Transportation Studies report (2025)
- M. M. R. Bhuiya, J. A. Flynn, **PSV**, and G. Circella, "Disability, Transportation, Activity Performance, and Neighborhood Features in California: Analyzing Data from a Survey", Pacific Southwest Region University Transportation Center report (2024)
- M. Cohen D'Agostino, C. E. Michael, and **PSV**, "Experiences with Autonomous Vehicle in U.S. Cities", University of California Institute of Transportation Studies report (2024)
- M. M. R. Bhuiya, J. M. Barajas, and **PSV**, "Effects of Road Collisions on the Travel Behavior of Vulnerable Groups: Expert Interview Findings", University of California Institute of Transportation Studies report (2024)
- **PSV**, J. A. Flynn, G. Circella, and D. Sperling, "Challenges facing people with disabilities in private vehicular transportation in the United States of America", UC Davis 3 Revolutions Future Mobility report (2023)
- **PSV**, J. A. Flynn, G. Circella, and D. Sperling, "Challenges faced by people with disabilities in public and active transportation systems in the United States of America", UC Davis 3 Revolutions Future Mobility report (2023)

- J. A. Flynn, G. Circella, and **PSV**, "People with Disabilities in California Want Density, Improved Streets and Buses to Help Pedestrians, Bus Riders, and Car Drivers", UC Davis Institute of Transportation Studies policy brief (2023)
- J. A. Flynn, G. Circella, and **PSV**, "Disability, Transportation, Activity Performance, and Neighborhood Features in California: Conducting a Focus Group and Designing a Survey", UC Davis Institute of Transportation Studies report (2023)

Scholarships, Awards, and Honors

- **Chancellor's Postdoctoral Fellowship** — Fellow
  University of California, Davis Award — *2020 September – 2022 August*
- **Bede Liu Best Dissertation Award** — Winner
  Princeton University Dep't of Electrical Engineering Award — *2020 May*
- **SEAS Award for Excellence** — Winner
  Princeton University School of Engineering and Applied Science Award — *2018 October*
- **Yan Huo *94 Graduate Fellowship** — Fellow
  Princeton University Dep't of Electrical Engineering Fellowship — *2017 September – 2018 June*
- **Early PhD Career Award** — Winner
  Princeton University Dep't of Electrical Engineering Award — *2016 May*
- **National Science Foundation GRFP** — Fellow
  National Graduate Fellowship — *2014 September – 2019 August*
- **Sigma Pi Sigma** — Member
  National Physics Honors Society — *Inducted 2014 June*
- **Phi Beta Kappa** — Member
  National Academic Honors Society — *Inducted 2014 June*
- **Selfless Service to Undergraduate Teaching by an Undergraduate Award** — MIT Physics Department Award Winner
  For contributions to 8.033 – Relativity lecture notes — *2013 September*
- **AFCEA NOVA Scholarship** — Winner
  Regional Scholarship — *2013 & 2014 May*
- **Xerox Technical Minority Scholarship** — Winner
  National Scholarship — *2012 & 2013 & 2014 January*
- **Smiths Industries Scholarship** — Winner
  Companywide Scholarship — *2011 January*

Transportation Planning Major Project Types

- Rail Plans
- Freight Plans & Freight Resilience Plans
- State DOT Strategic Planning, including Strategic Research Plans
- Public Transit Agency Strategic Planning
- SS4A & Vision Zero Plans
- State DOT & MPO Long-Range Transportation Plans
- Statewide Transportation Improvement Programs (STIPs)

Skills

- Deputy project management for projects of varying sizes
- Task leadership for projects of varying sizes

- Expertise in policy, legal, and regulatory analyses, especially for Americans with Disabilities Act, STIPs, and National Environmental Policy Act
- Demographic, labor market, freight, freight-related industry, and international trade policy research
- Strategic planning
- Grant identification & readiness analyses
- Contributing to proposals for transportation planning contracts
- Designing questionnaires for, coordinating, conducting, and analyzing quantitative & qualitative data from online surveys, virtual focus groups, and virtual stakeholder interviews
- Engagement with dozens of community-based organizations representing people with disabilities & other marginalized groups
- Technical: QGIS, Julia (including data scraping), LaTeX, numerical analysis

Leadership & Outreach Activities

- University of California, Davis Institute of Transportation Studies: advised graduate students J. A. Flynn (2021 October–2023 September) and M. M. R. Bhuiya (2022 October–2024 June)
- Featured on episodes of podcasts Arrested Mobility as well as Disability Rap for expertise in transportation & disability (2022)
- Princeton University SmartDrivingCar Summit panelist & discussant (2019, 2021, 2022)
- Princeton University Department of Electrical Engineering: mentored undergraduate research students J. D. Whitton (2015), T. J. Vongkovit (2018), and J. Necaise (2019)
- Princeton University School of Engineering and Applied Science: recruited students for PhD program at 2018 Society of Hispanic Professional Engineers (SHPE) Convention
- Princeton University Department of Electrical Engineering: panelist for prospective graduate student and new student fellowship panels (2016, 2017)
- MIT Society of Physics Students (SPS): Publicity Chair (2011 June–2013 May), Secretary (2013 June–2014 May), organized Lightning Lectures, weekly colloquium lunches, publicized SPS events
- 2013 MIT Diversity Summit panelist (Disability as an Aspect of Diversity)
- MIT Department of Physics: represented department at various campus-wide undergraduate major and research expositions

Educational Activities

- Guest lectured about transportation for people with disabilities for D. Sperling's undergraduate class, S. Handy's graduate and high school classes, J. M. Barajas's graduate class, and A. L. Cochran's graduate class on public policy (2021, 2023)
- Teaching assistant (TA) for Princeton class ELE 511 – Quantum Mechanics with Applications (2017 & 2018 fall): organized and led precepts, held office hours, and graded assignments & exams
- TA for Princeton class EGR 154 – Linear Systems (2018 spring): organized and led help sessions & office hours, and graded assignments
- Graded homework for MIT classes 8.012 – Physics I (2011 fall) and 8.022 – Physics II (2012 spring)
- Typeset MIT course notes for physics classes 8.033 – Relativity, 8.04 – Quantum Physics I, and 8.09 – Classical Mechanics III for use on MIT OpenCourseWare

- Online tutoring: InstaEDU/Chegg Tutors (high school through graduate school STEM subjects + economics, 2014 January–2017 December), Tutorspree (high school JAVA, 2012 August–2013 April)
- STEM educational videos: MIT UROP Spotlight (2013 January), MIT-K12 Initiative (2013–2014 January, 3 videos)