

Connor Riley

Co-founder & CTO
Ontra Mobility

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Profile

Technical founder and optimization engineer who turns research into production systems. Co-founder and CTO of Ontra Mobility (Y Combinator S24), owning platform engineering and applied modeling and co-leading product strategy for connected transit software. Previously a software engineer at Google and a primary architect of MARTA Reach and CAT SMART; PhD in Operations Research from Georgia Tech.

Experience

- Jul 2024 – Present **Ontra Mobility**, *Co-founder and CTO*, New York, New York
- Co-founded Ontra Mobility, a Y Combinator S24 company, and built its platform from the ground up; own platform engineering and applied modeling and co-lead product strategy.
 - Architected an AI planning platform that combines ridership, GTFS, operational, and demographic data to forecast demand, recommend service designs, optimize timetables, and compare cost, accessibility, equity, and fleet tradeoffs.
 - Led technical delivery of Longwood Commutes, a multimodal rider application integrating LMA Shuttle, MBTA, and Bluebikes real-time data.
 - Delivered planning systems for DDOT, Madera Metro, and the City of Fresno; selected through the 2026 Transit Tech Lab to conduct a proof of concept with MTA NYCT and LIRR.
 - Built and operated Ontra's AWS platform using Terraform across EKS, Batch, RDS, S3, ECR, IAM, and VPC; orchestrated production workloads with Temporal and GitOps/Argo CD.
- Nov 2023 – Jun 2024 **NSF AI Institute for Advances in Optimization (AI4OPT)**, *Senior Research Engineer*, Georgia Institute of Technology
- Led five researchers—one research engineer, one postdoctoral scholar, two PhD candidates, and one master's student—developing multimodal trip-planning, ridesharing, and dispatch algorithms that connect on-demand and fixed-route transit.
 - Served as primary architect of CAT SMART, a year-long, USDOT SMART Grant-backed deployment for Chatham Area Transit with rider, driver, supervision, reporting, and real-time dispatch capabilities.
- Aug 2022 – Nov 2023 **Google**, *Software Engineer, Display Ads Optimization*, New York, New York
- Developed and launched optimization features in Google Display Ads' large-scale production stack; owned implementation, experimentation, rollout, and production monitoring.
- Sep 2018 – Aug 2022 **Georgia Institute of Technology**, *PhD Candidate*, Atlanta, Georgia
- Primary architect of the backend and operational infrastructure for the 2022 MARTA Reach pilot, a six-month, four-zone deployment that served 8,332 riders with an average wait of approximately eight minutes.
 - Hardened the platform during live operations with unresponsive-vehicle detection, automatic driver sign-off and reassignment, and model changes based on observed field behavior.
 - Developed high-performance C++ and Python optimization software for dispatching, vehicle relocation, and multimodal trip planning; deployed microservices on Azure Kubernetes Service.

Selected Impact

- 30,000/hour First-author column-generation dispatch framework scaled to dense-city workloads while guaranteeing service and limiting trip deviation.
- Up to 55% Integrated optimization, demand forecasting, and model-predictive control reduced mean waits about 30% across experiments and up to 55% in high-demand zones.
- 8,332 riders MARTA Reach operated across four Atlanta zones with approximately eight-minute average waits and 94% satisfied or very satisfied riders.

Earlier Experience

- May 2016 – Aug 2018 **University of Michigan**, *PhD Candidate*, Ann Arbor, Michigan
Built the dispatch algorithm and distributed software for RITMO, an on-demand multimodal campus pilot integrating shuttles and fixed-route buses. Developed simulation and optimization systems in C++ and Python with Redis, WebSockets, RabbitMQ, Celery, and MongoDB.

Selected Publications

- 2020 **Connor Riley**, Pascal Van Hentenryck, and Enpeng Yuan. “Real-Time Dispatching of Large-Scale Ride-Sharing Systems: Integrating Optimization, Machine Learning, and Model Predictive Control.” *IJCAI*.
- 2019 **Connor Riley**, Antoine Legrain, and Pascal Van Hentenryck. “Column Generation for Real-Time Ride-Sharing Operations.” *CPAIOR*.
- 2023 Pascal Van Hentenryck, **Connor Riley**, et al. “MARTA Reach: Piloting an On-Demand Multimodal Transit System in Atlanta.”
- 2021 Ramon Auad, Kevin Dalmeijer, **Connor Riley**, et al. “Resiliency of On-Demand Multimodal Transit Systems During a Pandemic.” *Transportation Research Part C*.

Education

- 2022 **PhD, Operations Research**, *Georgia Institute of Technology*
Dissertation: *Operating On-Demand Ride-Sharing Services*. Advisor: Pascal Van Hentenryck. Research began at the University of Michigan before the lab moved to Georgia Tech.
- 2016 **BSE, Computer Science and Engineering**, *University of Connecticut*, *summa cum laude*
Minor in Mathematics; honors thesis in computational geometry.

Technical Expertise

- Optimization & AI Mathematical programming, column generation, model-predictive control, demand forecasting, Gurobi, CPLEX, HiGHS, Pyomo, OR-Tools.
- Product & Systems C++, Python, TypeScript/Node.js, React, Next.js, React Native/Expo, tRPC, gRPC, Protobuf, PostgreSQL/Drizzle.
- Cloud & Platform AWS (EKS, Batch, Lambda, RDS, S3, ECR, IAM), Terraform, Kubernetes, Docker, Temporal, Argo CD, GitHub Actions, Azure, Google Cloud, DigitalOcean.
- Mobility Data GTFS/GTFS-RT, OpenTripPlanner, H3, GeoPandas, Polars, PyArrow, Mapbox/deck.gl.

Recognition

- 2024 Y Combinator, Summer 2024.
- 2022 Van Hentenryck Fellowship, Georgia Tech.