Mark Lavrentyev

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Relevant Coursework

Intro to Software Eng. • Deep Learning • Formal Methods • Formal Proof & Verification • Programming Languages • Prescriptive Analytics • Probabilistic Methods in CS • Abstract Algebra • Topology • Grad. Topology • Galois Theory • Complex Analysis • Number Theory

** - denotes in-progress course*

Programming Languages

Racket • Scala • Java • C# • Python • Prolog • Haskell • SQL • TypeScript • Alloy

Tools & Technologies

Solidworks • Fusion 360 CAM • OnShape • MS Azure • PostgreSQL

Other Skills

English (native) • Russian (native) • Git • LaTeX

Social Media

github.com/MLavrentyev

linkedin.com/in/mlavrentyev

lavrema@outlook.com
mark_lavrentyev@brown.edu

Education

Brown University, Providence, RI — Sep. 2018 - Dec. 2022

- Concentration: Sc.B., Mathematics - Computer Science
- GPA: 3.86/4.00

Work Experience

Microsoft: *Software Engineering Intern* — Summers 2020-22

- Designed and developing MS Purview labeling for PPAC environments (current)
- Built notification center and analytics alerts system for PPAC (2021)
- Delivered a new admin DLP feature for the Power Platform admin center (2020)

Systems & Technology Research: *Computational Research Intern* — Spring 2021

- Worked on engine to synthesize valid configurations. Developed Prolog engine in Scala.
- Developed new algorithm to provide reasons for query failures in Prolog

Fidelity Investments: *Data Engineering Intern* — Summer 2019

- Developed package to parse financial crime alerts for data analytics (Oracle SQL)

Air Force Research Lab: *Wright Scholar* — Summer 2017

- Developed MOSSE-based fast image annotation program for machine learning research
- Optimized face-detection program running on Jetson TX2

Projects & Contributions

Vehicle Routing Solver (github.com/MLavrentyev/vehicle-routing)

- Solver for finding least-cost routing to customers while respecting truck capacities

Forge (github.com/tnelson/Forge)

- Alloy-like formal methods language. Language development & documentation.
- Added support for BDD solvers, custom SAT solvers, and integers.

Other projects can be found at github.com/MLavrentyev

Activities

Brown Formula SAE Racing Team — Sep. 2018 - present

- Captain (2022 season). Led team to design, build, and compete with formula-style race car. Led technical decisions, logistics, procurement, and team building.
- Finished 43/100 teams at FSAE Michigan 2022. First completed car since pandemic.
- Engine tuning/dyno lead (2020-21 seasons). Brakes lead (2022-23 seasons)

Teaching Assistant — Sep. 2019 - Sep. 2021

- Meta TA - Coordinate CS department undergraduate TA program (2021 - 2022)
- Head TA - Prescriptive Analytics (Spring 2021), Logic for Systems (Spring 2020)
- TA - Programming Languages (Fall 2020), Intro Linguistics (Fall 2019)

FIRST Robotics Competition Team 4557 — Sep. 2014 - May 2018

- Programming team lead (2017), drive team member (2016-2018)