Mark Lavrentyev

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Relevant CS Coursework

Formal Methods • Formal Proof & Verification • Compilers • Design of Programming Languages • Probabilistic Methods • Prescriptive Analytics

Relevant Math Coursework

Abstract Algebra • Galois Theory • Number Theory • Topology • Algebraic Topology • Complex Analysis • Statistics

Programming Languages

Racket • Scala • Haskell • OCaml • Rust • Java • C# • Python • Prolog • Alloy analyzer

Languages

English (native) • Russian (native)

Social Media

github.com/MLavrentyev

linkedin.com/in/mlavrentyev

mark@mlavrentyev.com

Education

Brown University   Sep. 2018 - Dec. 2022
- Concentration: Sc.B., Mathematics - Computer Science
- GPA: 3.93/4.00

Work Experience

Microsoft: *Software Engineer II*   Feb. 2023 - present
- Delivered new real-time activity logging pipeline for Dynamics 365 and Power Platform
- Maintained and triaged issues related to existing business apps analytics pipelines

Microsoft: *Software Engineering Intern*   Summers 2020-2022
- Delivered tenant policy (tenant isolation, sensitivity labeling) features in Power Platform
- Built notification center and analytics alerts system for Power Platform admin center

Systems & Technology Research: *Research Intern*   Spring 2021
- Developed Prolog engine in Scala instrumented to provide provenance for query failures
- Integrated Prolog engine into CEGIS-based system for configuration synthesis

Fidelity Investments: *Data Engineering Intern*   Summer 2019
- Developed package to parse potential financial crime alerts for to aid in further analysis
- Worked in Oracle SQL developing views for risk management team

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 - Dec. 2022
- Captain (2022). Led the design, manufacture, testing, and racing of a formula race car
- Engine tuning lead (2020), Brakes lead (2022-23)

Teaching Assistant   Sep. 2019 - Sep. 2021
- Meta TA - Coordinated CS department undergraduate TA program (2021)
- Head TA - Prescriptive Analytics, Logic for Systems
- TA - Programming Languages, Intro Linguistics

FIRST Robotics Competition Team 4557   Sep. 2014 - May 2018
- Programming team lead (2017), drive team member (2016-2018).