General Information

Full Name	Damian Barabonkov
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Address	Strassburger Str 7g, Berlin, Germany, 10405
Programming	
Languages	English, Bulgarian, German, Spanish, Russian

Education

2020 - 2021
Cambridge, MA, USA

Masters of Engineering (MEng)
Massachusetts Institute of Technology
- Computer Science
- Masters Thesis
  - Guarda — A web application firewall for WebAuthn transaction authentication
- GPA 5.0/5.0

2016 - 2020
Cambridge, MA, USA

Bachelor of Science
Massachusetts Institute of Technology
- Computer Science and Engineering
- GPA 4.9/5.0

Experience

2021 - PRESENT
Berlin, DE

Software Engineer
QuantCo Inc.
- *Project*: Lead client-facing machine learning product
  - Project interactively displays machine learning predictions to client
  - Collaborate and coordinate with multi-disciplinary team of product, engineering and UI talent
  - Factor in client feedback when developing product
  - Orchestrate containerized backend systems to ensure high availability and correctness of service
  - Test rigorously with various levels of staging environments before pushing to production
- *Project*: Develop internal feature engineering framework
  - Framework handles feature engineering of pricing and risk-assessment models for two large German car insurers forming *5%* of total market share
  - Increased productivity of data scientists using framework with a near *10x* performance gain when performing incremental feature computations
  - Profiled existing code to address performance pain points
  - Diagnose, isolate, report and resolve bugs throughout the entire tech stack
  - Open-source contributions to Python packages: `Pandas`, `Numpy`, `Kartothek`
- *Project*: `groupstorm` — open-source, hyper-fast and flexible DataFrame group by
  - Implements group by and aggregation operations with benchmarked *479x* the speed of `Pandas`
  - Dropped development latency of data scientists from ~30 minutes down to less than a minute
- *Project*: `conda-comply` — open-source software license compliance checker
  - Automates error-prone process of asserting software license compliance of company's software products
  - Alleviates need for complicated and cumbersome licensing training for the engineers
  - Improves the company's copyright compliance and legal conformity
- *Project*: Automate recruiting coding challenge takehome submissions
  - Streamlined engineering recruiting workflow by automating coding challenge submissions
  - Improves the company's security and General Data Protection Regulation (GDPR) compliance

2020
Karlsruhe, DE (remote)

Machine Learning Engineer
QuantCo Inc.
- *Project*: Optimize data pipelines of Python machine learning framework
  - Profiled existing code to identify and resolve performance bottlenecks
  - Improved speed of pipelines by *470%* in best cast and *115%* in worst case
  - Contributed to Python language codebase and Joblib Python library
  - Led active communication to ensure efficient development velocity

2019
Singapore, SG

Supply Chain Researcher
Singapore — MIT Alliance for Research and Technology
- *Project*: Design mixed integer programming model to optimize redistribution strategies for dockless bike sharing within Singapore
  - Employed statistical processes and mixed integer programming for optimization to find best redistribution configurations
  - Submitted publication to *Transportation Research Board* (TRB) journal
  - Accepted and exhibited as a poster presentation at TRB conference
  - Collaborated in a team of three members respective of strengths and abilities

2018
Menlo Park, CA, USA

Performance and Capacity Engineer
Facebook Inc.
- *Project*: Engineer existing profiler to measure additional performance metrics
  - Aggregated database usage metrics from affected services across Facebook
  - Tuned database utilization of production services in order to improve performance with large cost-saving consequences

Open Source Projects

2023
`conda-comply`
- Check conda environment dependencies for compliance with permissive, copyleft or other user-defined license sets

2023
`groupstorm`
- A hyper-fast library in Python to group candidate DataFrame rows against every row in a reference DataFrame according to user-supplied constraints

2022
downloads **2k**
`algopytest`
- A framework which hides away all of the complexity and repetitiveness that comes with testing Algorand Smart Contracts

2021
`guarda-firewall`
- A proxy firewall prototype for RESTful services to easily support WebAuthn two-factor authentication

Teaching Engagements

2021
Undergrad Course

Computability and Complexity Theory (6.045)
- Teaching Assistant with office hours, recitation and assignment duties
- Co-created entire year's curriculum of homework assignments and exams

2020
Graduate Course

Theory of Computation (18.404)
- Teaching Assistant with office hours, recitation and assignment duties

2019
Undergrad Course

Software Performance Engineering (6.172)
- Curriculum Developer with task to redesign first of four lab assignments
- Lab assignment still in active use

2019
Undergrad Course

Computation Structures (6.004)
- Lab Assistant with office hours duties

2018
Undergrad Course

Software Performance Engineering (6.172)
- Teaching Assistant with office hours and assignment duties

2018
Undergrad Course

Physics II: Electricity and Magnetism (8.02)
- Teaching Assistant with office hours and assignment duties

2017
Summer Bootcamp

Global Startup Labs: Russia
- Technical Assistant with teaching, office hours and lab duties

Academic Interests

Computer Systems
- Performance Engineering
- Distributed Systems
- Computer Systems Security
- Operating Systems

Theory of Computation
- Computability Theory
- Complexity Theory

Personal Interests

Sports and Athletics: Cycling, Inline Skating, Weight Training

Arts and Culture: Language Learning, Latin Dance, Travel

Favorite Reads: Crime and Punishment, The Master and Margarita, All Quiet on the Western Front