

Nicholai Dimov

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Education

Washington University in St. Louis

St. Louis, MO

M.S. in Computer Science

Expected May 2024

B.S. in Computer Science and Mathematics, Minor in Linguistics

- Overall **GPA 4.00/4.00**, Arthur Holly Compton Fellow (Full-Tuition merit scholarship), Dean's List all semesters
- **Relevant Coursework:** CS: Multi-Paradigm Programming in C++, Translation of Computer Languages (Compilers), Modeling and Performance Evaluation of Computer Systems, Systems Software, Data Structures and Algorithms, Machine Learning, Programming Systems and Languages, Natural Language Processing, Automata and Complexity, Combinatorial Optimization, Coding and Information Theory
Math: Linear Algebra, Modern Algebra, Differential Equations, Probability and Statistics, Number Theory and Cryptography, Financial Mathematics, Time Series Analysis, Optimization

Experience

Matroid *Infrastructure Software Engineering Intern*

Palo Alto, CA

- Researched, designed, and implemented statistical models for resource utilization of computer vision ML models across cloud and on-prem deployments. Reduced server costs while upholding consistent high throughput at scale
- Ideated and implemented live monitoring system to remove system degradation at high load

Meta *Software Engineering Intern*

Seattle, WA

- Implemented novel optimization framework to minimize waste of limited power capacity for placing datacenter server racks
- Improved organization code quality by adding unit tests, streamlining datacenter models, ensuring consistent typing
- Lowered size of mixed integer linear programming model by 40%, reducing computational load of 200+ runs per day

MealMe *Software Engineering Intern*

San Francisco, CA

- Architected and built REST APIs in Python and Flask that handle 100k+ orders across dozens of food ordering platforms
- Cut customer service usage by 70% with new tooling as revenue increased by 300% over 2 months

Washington University in St. Louis *Teaching Assistant for CSE 247 (Data Structures and Algorithms)*

St. Louis, MO

- Taught students asymptotic analysis as a method to evaluate scalability and effectiveness of solutions to algorithmic problems
- Led interactive group studios, weekly office hours, and graded written lab writeups for this class with 300+ students

Coherent *Research & Development Intern*

Pine Brook, NJ

- Performed production flow analysis in Minitab to optimize the acquisition of multimillion-dollar machines

Personal Projects

MIT Mystery Hunt 2023 (<https://puzzles.mit.edu/2023/interestingthings.museum/>)

- Built chat bots and interactive multiplayer puzzles for this premier weekend-long competition. Python, Django, TypeScript, React

Course Chat Linker (<https://ndimov.com/course-linker>)

- Created website used by hundreds of students to search for, join, and upload group chats for each of their classes. React, Express, Node.JS

Hanab Live (<https://hanab.live/>)

- Implemented new features, bug fixes, and rectified corrupted database for this multiplayer card game website. TypeScript, Go, Python, SQL

Leadership

WashU Puzzle Club *President and Founder*

St. Louis, MO

- Select and lead diverse activities during weekly meetings that match members' interests in crosswords, logic puzzles, and more
- Organize and manage weekend-long team puzzlehunt competitions

Awards

Putnam – Top 3% on most prestigious university-level proof-based mathematics competition

ICPC – Led team to qualify for 2021 North American Division Championship

Brian Blank Award – Distinguished junior in mathematics

Math Kangaroo – 1st place nationally for 8 years in a row. Invited as 1 of 10 Americans to Zakopane Math Camp in Poland, all expenses paid

USAJMO – 2019 Qualifier, from top 0.05% nationally (250 students)

USACO – Gold Division, ranking in top 500 of pre-college participants nationally

Bloomberg Summer of Puzzles – 2nd place winner in 2023 and 2020

Skills

Programming Languages – Advanced: Python, Ruby Intermediate: C++, TypeScript, SQL, JS, HTML, CSS Familiar: Racket, Go, Bash

Technologies – Advanced: Git, Linux, \LaTeX Intermediate: Django, React, MongoDB Familiar: AWS, Docker, Express, Firebase, PostgreSQL

Languages – English (native), Bulgarian (native), French (fluent), Dutch (beginner), Mandarin Chinese (learning)