Yevhen Melnyk

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EDUCATION

Amherst College, Bachelor of Arts   Amherst, MA
Majors: Mathematics, Computer Science   Expected Graduation date: May 2022
Projected GPA: 3.74/4.00
SAT: 2370/2400

Physics-Mathematics Lyceum №161   Kharkiv, Ukraine
GPA: 11.32/12.00   Graduation date: May 2016

EXPERIENCE

Research Internship for QuaRCS at Amherst College   August 2018— October 2018
- Architected the infrastructure for a US-wide educational survey, which included automatized administering,   Amherst College
  analysis and publishing of survey results
- Was responsible for exporting the results of the survey from a commercial survey provider using headless browsing (Selenium).
- Set up a MySQL server to automatically import the obtained results as well as a simple webserver to publish the results (Flask).
- Implemented extensive scripting to fully automate the pipeline of the project (Python)

Research Internship in Mathematics at Amherst College   June 2018— August 2018
- Gained experience with graduate-level algebraic geometry   Amherst College
- Conducted numerical computations involving polynomial ring, ideals and Gröbner Bases in Macaulay2
- Regularly contributed to the analysis of relevant conjectures, ultimately resulting in a proof of a new theorem

Teaching Assistant for class in Computer Science   January 2018—May 2018
- Designed labs and projects for approximately 30 students in class   Amherst College
- Held regular office hours to help students understand theoretical concepts
- Helped improve lecture content by developing alternative explanations and analogies for various concepts

TECHNICAL COMPETENCIES

- Programming Languages: proficiency in Python and Javascript, familiarity with Java and SQL
- Web Development: HTML, CSS, basics of React
- Front-end development environment: npm, Webpack, Babel
- Development tools: Eclipse, IDEA, VSCode
- Operating systems: Windows, Linux, macOS
- Data Visualization: Mathematica, MATLAB, matplotlib
- Version control systems: Git
- Miscellaneous: MapReduce, Selenium, Socket.io

COURSEWORK & SKILLS

Mathematical Background
- Took courses on: Differential Equations, Probability Theory, Number Theory, Graph Theory, Real Analysis, Abstract Algebra, Complex Analysis, Computational Algebraic Geometry, Lie groups and Algebras, Topology, Elliptic Curves

Computer Science, Data Structures and Algorithms
- Explored the design and analysis of computer algorithms with emphasis on design paradigms, including divide-and-conquer, greedy algorithms and dynamic programming

Computer Science, Data Mining
- Explored various topics in Data Mining, including mining data streams and time series, the MapReduce/Spark model, significant patterns extraction and dimensionality reduction.

Computer Science, Machine learning: Python
- Examined the concepts of supervised, unsupervised, ensemble and reinforcement learning
- Implemented learners for decision tree learning, rule learning, neural networks, support vector machines, Bayesian learning, clustering
- Practiced the application of different machine learning models on real-world data on Kaggle

Computer Science, Theoretical foundations
- Covered the basics of the theory of formal languages including regular, context-free and context-sensitive languages, finite state automata, Turing machines, decidability, and computational complexity