

William Zijie Zhang

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EDUCATION

Polytechnique Montreal <i>Master's in Electrical Engineering, Supervisor: Antoine Lesage-Landry</i>	Montreal, Canada Sept. 2024 – Present
Concordia University <i>Bachelor of Computer Science Honours, Minor in Mathematics and Statistics</i>	Montreal, Canada Sept. 2020 – May. 2024
University of Manchester <i>Concordia Student Exchange Program, Exchange Ambassador</i>	Manchester, United Kingdom Jan. 2023 – June. 2023

EXPERIENCE

Open Source Core Developer @ CVXPY <i>NumFOCUS</i> <ul style="list-style-type: none">Helped lead the release for version 1.6.0Triaged GitHub issues, reviewed pull requests, helped userbase by answering questions on DiscordDiscussed future direction of the project with the maintainer team	Aug. 2024 – Present <i>Remote</i>
Research Scientist Intern <i>Gridmatic</i> <ul style="list-style-type: none">Mentors: Steven Diamond and Amir MousaviLed the development of new CVXPY features: ND expressions matching NumPy's API and sparse variables reducing problem dimensionHelped implement these new features into a battery (CAISO) and market (ERCOT) simulatorSupported the retail team with visualizations of backtest performance for a controllable load with ancillary awards	June 2024 – Sept. 2024 <i>Cupertino, California</i>
Open Source Contributor @ CVXPY <i>Google Summer of Code - NumFOCUS</i> <ul style="list-style-type: none">Mentor: Philipp Schiele, Final Report: LinkImproved compilation time of parametrized convex optimization problems by up to 100x. These performance benefits affect almost all of CVXPY's users.Implemented canonicalization backends in NumPy and SciPy by replacing the original sparse tensor representation. Designing new backends in python-graphBLAS and Rust.Benchmarked and analyzed issues raised by the community in domains such as: Plasticity Modelling, Quantum Computing and Portfolio Optimization.NumFOCUS independent developer contract: updating the CVXPY documentation and webpage	June 2023 – Aug. 2024 <i>Remote</i>

PROJECTS

Compeuler <i>Lexical and semantic analysis, AST and code generation</i> <ul style="list-style-type: none">developed a LL(1) grammar from a set of syntax rules for a custom languageformed and visualized abstract syntax trees using Graphviz and the visitor pattern while parsing nodesgenerated and executed MOON assembly code for simple programs of the language	Jan. 2024 – May 2024
Broadcasting in NetworkX <i>Graph Theory, Algorithms and Heuristics</i> <ul style="list-style-type: none">Supervisor: Hovhannes Harutyunyan, Final Report: LinkImplemented a linear-time tree broadcasting algorithm using the Python graph analysis library NetworkXContributed to NetworkX's graph algorithms suite by introducing a new section for broadcasting	Aug. 2023 – Dec. 2024

PRESENTATIONS

Convex Programming with CVXPY <i>Manchester Interdisciplinary Mathematics Undergraduate Conference</i>	Manchester, United Kingdom Mar. 2023
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TECHNICAL SKILLS

Frameworks: CVXPY, NumPy, SciPy, NetworkX, graphBLAS
Languages: Python, SQL, C/C++, JavaScript, Java
Developer Tools: Git, Docker, MongoDB, Microsoft Azure, Databricks
Certifications: Databricks Data Engineering Associate, Microsoft Azure Fundamentals