Lukas Mathesius

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EDUCATION

The University of Texas at Austin, Austin, TX May 2027
Bachelor of Science in Computer Science, *Bachelor of Science in Mathematics*, GPA 3.98

Relevant Coursework: Data Structures and Algorithms, Computer Organization and Architecture, Discrete Mathematics (+ for Computer Science), Linear Algebra, Probability, Advanced Calculus for Applications II, Principles of Computer Systems, Differential Equations with Linear Algebra, Software Engineering, Algorithms and Complexity

Activities: Association for Computing Machinery (Member), Planet Longhorn (Member), Longhorn Neurotech (Member)

EXPERIENCES

Computer Science Honor Society: August 2022 – May 2023

- Founded a chapter of the National Computer Science Honor Society to enhance technology engagement
- Guided students to computer science principles using a Spot Boston Dynamics Robot Dog

Longhorn Neurotech: August 2024 - Present

- Using brain-computer interfacing to control devices with increasing degrees of freedom
- Developing machine learning models to interpret electroencephalogram (EEG) data for real-time applications
- Participating in the annual NeuroTechX (2025) competition by controlling a virtual avatar using EEG data

PROJECTS

Graph Ranking Algorithm:

- Implemented Dijkstra's algorithm using a graph data structure to rank sports teams' performances
- Designed a custom-built graph data structure to conduct a weighted evaluation of sports teams

File Compressor:

- Created a Java program that uses the Huffman Encoding Scheme to compress and decompress input files
- Developed algorithms to encode files into binary format, reducing file size while maintaining data integrity

EEL-Interpreter:

- Built a custom programming language known as Expression Evaluation Language using a C interpreter
- Created a program that parses, evaluates, and executes inputs using an abstract syntax tree

System Emulator:

- Designed and implemented a custom system emulator in C, capable of executing various assembly instructions
- Gained experience with low-level programming, bitwise operations, and debugging complex systems

HONORS

Distinguished College Scholar 2025
University Honors (4 Semesters) Fall 2023, Spring 2024, Fall 2024, Spring 2025
High School Valedictorian (of 450) May 2023

ONGOING PROJECTS

Skills: *NumPy, Pandas, Sklearn, PyTorch*
Investment Simulation App: *Developing an app that lets users simulate investments of different types to practice for real-world applications, competing against machine-learning algorithms to estimate viability of long-term profitability*

ADDITIONAL INFORMATION

Skills: Java, Python, C, HTML, CSS, VS Code, PyCharm, Eclipse, Linux, JavaScript, Coding-Assistant Tools
Languages: German (Native), English (Native), French (Conversational), Swiss-German (Conversational)
Citizenship: German, Swiss
Interests: Computer Science, Mathematics, Software Engineering, AI/ML, Applied Virtual Reality
Work Eligibility: Eligible for U.S. work with sponsorship