Advay Vyas

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EXPERIENCE

• **Spartan Fitness Holdings** *June 2024 - August 2024*
Summer Finance Associate Dallas, TX
- ◦ Worked with the financial team at Spartan Fitness Holdings to clean, process, and report on location acquisition data and accounting records for 80+ Club Pilates franchises.
- ◦ Utilized Microsoft Excel, OfficeConnect, and Microsoft PowerBI to handle financials such as debt covenants, EBITDA calculations, and loan data.

• **University of North Texas** *March 2023 - May 2024*
Undergraduate Research Assistant Denton, TX
- ◦ Conducted traffic research with Dr. Jianguo Liu in the UNT Mathematics Department
- ◦ Generated realistic irregular networks modeled on US Department of Transportation data.
- ◦ Created custom irregularity statistics, calculated a gradient with a constraint, and approximated gradient minima using Lagrange multipliers to find the most regular traffic distribution.
- ◦ Reduced traffic irregularity by 31.3% using traffic models and algorithms to try to reduce the $179 billion each year wasted on the effects of traffic jams.

• **University of North Texas** *October 2022 - May 2024*
Undergraduate Research Assistant Denton, TX
- ◦ Conducted computational neuroscience using an AI-powered dynamic video game and an EEG under Dr. McMahan's Mixer Lab in the UNT Learning Technologies Department.
- ◦ Developed the game and navigation AI for the game with Unity AI and the NavMesh package.
- ◦ Worked on the weighting of the decisions, flowchart of recursive scenarios, and EEG testing.
- ◦ Goal to help educators to understand individual children and tailor classroom experiences.

EDUCATION

• **University of Texas at Austin** *August 2024 - May 2027*
B.S. in Statistics and Data Science and B.S. in Mathematics Austin, TX
- ◦ GPA: 4.0/4.0

• **Texas Academy of Mathematics and Science** *May 2024*
Computer Science + Computer Engineering Track Denton, TX
- ◦ GPA: 4.0/4.0

PUBLICATIONS C=CONFERENCE, J=JOURNAL, P=PATENT, S=IN SUBMISSION, T=THESIS

[C.1] Vyas, A., Rebello, E., & Liu, J. (2023). **A Lagrangian Approach to Loss Function Optimization on Traffic Network Regularity**. In *2023 IEEE MIT Undergraduate Research Technology Conference (URTC)*. IEEE. Cambridge, MA. DOI: 10.1109/urtc60662.2023.10534993.

[J.1] McMahan, T., Tangton, C., Vyas, A., Huang, C., & Yewoor, A. (2024). **Bridging the Gap Between Perceived and Actual Personalities in Real and Virtual Worlds Through EEG Analysis.** *Annual Review of CyberTherapy and Telemedicine*, Vol. 22, pp. 206-212. ISSN: 1554-8716.

SKILLS

- • **Programming Languages:** R, Python, C++, Java, C#
- • **Data Science & Machine Learning:** Pandas, NumPy, scikit-learn
- • **Other Tools & Technologies:** NetworkX, Unity

HONORS AND AWARDS

• **$2,500 National Merit Finalist Scholarship** *January 2024*
National Merit Scholarship Corporation [🌐]
• **Eagle Scout** *August 2023*
Boy Scouts of America [🌐]
• **UNT Undergraduate Research Fellow** *March 2023*
University of North Texas [🌐]