**Lantian Xia**

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**EDUCATION**

**Vanderbilt University**  Nashville TN

*Bachelor of Arts, Economics & Bachelor of Science, Computer Science* 2022.08

* Relevant coursework: VR, AI, Relational Database, Data Science, International Economy, Philosophy
* Technical skills: Intermediate to advanced level in Java, C++, SQL, Python; Basic knowledge in Matlab, R, html, PHP; Operating System: Windows, Mac OS, Linux; Tools: Unity, Blender, Excel, etc.

**RESEARCH EXPERIENCE**

**Vanderbilt University Medical Center Guo Lab**Research Assistant Nashville, 2023.07 – present

* Utilized the MetaXcan tool to do association analysis between predicted gene expression and colorectal cancer risk based on The Cancer Genome Atlas and Genotype-Tissue Expression data.
* Optimized efficiency and accuracy of predictive models through eliminating confounding factors.
* Used PANDAS to do explored data analysis, data pre-process and results visualization.

**Vanderbilt University Institute of Imaging Science** Research Intern Nashville, 2023.07 – present

* Divide the human brain into distinct separate networks to analyze the functions of each network.
* Developed time-series processing algorithms for computing activity energy in brain cortex using MRI data.
* Discovered relationships between cortical activity energy and the gray-white matter activity correlation.

**University of British Columbia Kaggle Competition** Competitor Nashville, 2023.10 – 2024.01

* Formed 5-person team for Ovarian Cancer and Outlier Detection competition to achieve silver medal (Rank: 5%).
* Implement EfficientNet B0 model for image classification.
* Implemented a cosine annealing learning rate strategy for effective training.
* Utilized cross-entropy as the loss function, which is suitable for classification tasks.

**Kaggle Competition: Optivar Competition (stock price)** Competitor Nashville, 2023.09 – 2024.03

* Formed 2-person team for 200 Stock’s Closing Price at Nasdaq Prediction competition to achieve silver medal (Rank: 3%).
* Implemented Lightgbm model for fast and stable prediction based on GPU training.
* Engineered 189 features to improve the prediction performance.
* Reduced the runtime through data format optimization and parallel computation.

**Kaggle Competition: LLM - Detect AI Generated Text.** Competitor Nashville, 2023.01 – 2024.02

* Formed 5-person team for distinguishing whether the text is generated by Al to achieve silver medal (Rank: 4%).
* Designed and implemented various machine learning models, including deep learning techniques, to classify text effectively.
* Innovated and tested different feature sets to improve the model's ability to discern subtle differences between human and AI text.

**PROJECT EXPERIENCE**

**Public Transit Equity and Accessibility Analysis** *Researcher (1/3)* Nashville, 2022.01 – 05

* Investigated the correlation between income level and public transit usage, as well as the difference in the degrees of impact COVID-19 had for high-income groups and low-income groups in terms of transit use.
* Generated a Census socio-economic dataset focusing on Chattanooga, TN from a comprehensive dataset.
* Conducted spatial analysis of ridership patterns and correlate the findings with the socio-economic data.

**US Car Accidents Database and Analysis** *Project Design and Implement Researcher (1/2)* Nashville, 2022.01 – 05

* Created a large-scale, real-time, interactive database about car accidents in the US.
* Implemented a web application for users to view and update accident cases and generated risk predictions.
* Responsible for back-end database management; Involved in writing SQL Stored Procedures, Functions, Triggers and Views for database. Conducted statistical analysis based on the environmental stimuli.

**Project in Artificial Intelligence** *Project Design and Implement Researcher (1/4)* Nashville, 2021.01– 2021.05

Directed by Prof. Douglas Fisher of Computer Science

* Built a story world with countries and currency, and simulated trade, treaties and wars between countries.
* Employed macroeconomic and currency theories while designing the functions representing state manufacture, consumption, and trade.
* In charge of implementing war function, setting up functions for war incentives and bars, and determining the consequence of the war on state manufacturing, exchange rates, and world trade.
* Tested this world by manipulating the resource distribution, the aggressiveness of war, and the diplomacy to gain a better understanding of trade relations and how country wealth can push trades or not.

**U.S. World Trade Patterns** *Undergraduate* *Researcher (1/2)* Nashville, 2020.06 – 2021.02

Directed by Dr. Mario Crucini, Department of Economics

* Collected and analyzed US historic trade data to examine the roles of top trade partners in US trade patterns across sectors from 1970 to 2020.
* Facilitated statistical analysis to get the detailed trends and fluctuations of export and import amounts.
* Accounted for the source of fluctuations in trade flows with innovative beta decomposition methods.

**U.S. Medical Industry Structure and Trade Patterns** *Undergraduate* *Researcher* Nashville, 2020.08 – 2022.05

* Thoroughly researched the industry structure of medical equipment and medicine.
* Responsible for data analysis on trade patterns in the medical industry and visualization of the results.
* Proposed two policies to the US government and three policies to the WTO on supply chain problems.
* Thoroughly researched COVID-19 vaccine global supply chains and wrote policy proposals accordingly.

**Virtual Reality Introductory Design** *Project Design and Implement Researcher (1/5)* Nashville, 2020.08 – 2021.02

Directed by Prof. Bobby Bodenheimer, Department of Computer Science

* Designed a VR multi-player social game that simulates the EBI dining hall and the lunch experiences medicine.
* Responsible for implementing chat-box and voice chat functions, setting up the multi-player internet with Unity and Blender

**PROFESSIONAL EXPERIENCE**

**Lyne.ai** *Co-founder/Product Manager* Nashville, 2023.09 – 2023 .12

* Spearheaded the development and execution of a strategic roadmap for Lyne.ai's AI-powered sales personalization platform, focusing on enhancing cold email efficacy.
* Led the development of advanced AI features, including personalized email content generation and sales prediction algorithms.
* Established and maintained effective feedback mechanisms, utilizing user insights to drive continuous product improvements.

**Dyno Growth** *Product Manager* Nashville, 2023.09 – present

* Established a website for product and sales data.
* Helped TikTok merchants choose best-selling items.
* Helped TikTok merchants connect with suppliers.

**Overarching Computation** *Co-founder & Research engineer*  Nashville, 2022.10 – 2023.10

* Co-founded the company; responsible for management; maintaining collaborative relationships.
* Used C++ to develop finite element algorithms that achieved matrix assembly for the heat conduction equation and Maxwell's equations, as well as equation solving.
* Used C++ to implement a Fourier transform algorithm, which facilitates the transformation from near field to far field through Fourier transform.

**Qualifacts Systems Inc** *Backend Developer & Tech Consultant* Nashville, 2023.01– 2023.04

* Involved in Core Java coding by using Java APIs such as Collections, Multithreading, Exception Handling, Generics, Enumeration to fulfill the implementation of business logic.
* Implemented Java EE components using Spring MVC, Spring IOC, Spring transactions and Spring security modules.
* Involved extensive usage of HTML5, CSS3, Java Script and React for client side development and validations

**J.P. Morgan Chase & Co.** *Equity Research Analyst* Shanghai, 2021.03 – 2021.09

* Wrote sub-sector research report in medical industry and real-estate industry; Independently finished more than 70% of industry report.
* Prepared report-level information and met with supervisor to discuss research results.
* Attended teamwork of data collecting, information sharing and research discussing.
* Helped construct valuation models: established a deep understanding of the profit model and accounting performance of listed companies; confirmed the model hypothesis through field research.
* Conducted statistical analysis, evaluated the stock investment value through various valuation methods, and provided target stock price for the secondary market.

**Bigger Lab** *Lecturer and course designer* Shanghai, 2021.05 – 2021.08

* Helped design foundational level courses that employ CSTA K-12 CS Standards to provide coding education for k7-12 teenagers and prepare them for global CS competitions in various tracks.
* Drafted algorithm course outline, helped design the 8-week intensive algorithm course on different levels of difficulty for 47 students (k7-12) in their preparation for USA Computer Olympiad.

**Altair** *Software Engineer Intern* Remote,2022.06 – 2022.08

* Monitored and analyzed trading profit and loss in real time.
* Monitored and analyzed fixed income RFQs and hit ratios in real time.

**Meta Reality Lab** *Software Engineer Part-time Assistant* Nashville, 2022.05 – 2022.06

* Worked on a project that brought a filtering mechanism into gaming feed and improved users experience.

**Vanderbilt Fundraising Office** *Software Student Ambassador* Nashville, 2019.02 – 2019.10

* Connected possible contributors, updated their information, and maintained long-term relationship.
* Raised over 100,000USD in half a year and ranked in the top 10.

**LEADERSHIP & VOLUNTEER EXPERIENCE**

**OFO Bike Launching Team**  *One of the Five Members* Nashville, 2017.08 – 2018.06

* Surveyed 800 students and interviewed 50 among them on their opinions about campus transportation.
* Generated and analyzed data to demonstrate convincingly the demand for the bike type transportation on campus, and co-designed 9 business plans accordingly, removing the concerns from users, school leaders
* Helped write proposals to Vanderbilt Administration and communicate with Nashville government.
* In charge of connecting with 13 firm partners, supervising cooperation and maintaining relationships; brought the collaboration with VIES and SPEAR; gained support and recognition from the school.
* Successfully launched OFO station-less bikes on campus, which is OFO’s first sight in the U.S., won “Top 1 in Daily Use” and Tennessee Sustainable Transportation Award after the market promotion.

**PEERS (Peer-to-Peer Emotional Education and Relational Support)**  *Facilitator* 2019 – 2022

Director of Academics: Dr. Ke Xu (MD, PhD), Associate Professor of Psychiatry, Yale School of Medicine

* Launched Podcasts that discuss identity construction embedded in social interactions and cultural.
* Facilitated course sessions of our leading online workshop which aims to spread the knowledge about mental and emotional well-being and practice relational support.

**VSVS (Vanderbilt Student Volunteers for Science)** *Member* Nashville, 2019.08 – 2020.05

* Tutored the weekly science lab sessions for k-7 students in Rose Park Math/Science Magnet.

**LANGUAGES & HOBBIES**

* Language: proficient English (SAT 2300/2400, GRE 330/340), Chinese (native)
* Hobbies and activities: Policy Debater, Vanderbilt Debate Squad; Erhu Performer, Vanderbilt Asian Instrument Ensemble; Alto & Soprano, Vanderbilt Concert Choir; Finance Board, Global China Connection