JANIA VANDEVOORDE

Citizen of the United States, France, and the Dominican Republic

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EDUCATION

Brown University • Providence, RI   Graduation: May 2025

Bachelor of Science - Computer Science | Bachelor of Science - Statistics   Major GPA: 4.0

- **Relevant Courses:** Machine Learning, Computer Vision, Data Science, Computer Systems, Data Structures, Advanced Algorithms, Theory of Computation, Programming Languages, Software Engineering, Linear Algebra, Multivariable Calculus
- **NCAA Division I Women's Rugby Athlete:** Team Captain and Starter
  - 2023 & 2024 (Back-to-Back) Collegiate Rugby Championship 7's National Champion
  - **Recognition:** 2022-23 & 2023-24 Scholastic All-American, 2023-24 Strength & Conditioning Athlete of the Year

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TECHNICAL TOOLS & SKILLS

- **Programming Languages:** Python, R, C#, Java, C/C++, JavaScript, TypeScript, Alloy
- **Technologies:** SQL, Git, LaTeX, TensorFlow/PyTorch/Keras, NumPy, pandas, matplotlib, scikit-learn, React, Jira
- Fluency in English and French; basic proficiency in Arabic
- Global-minded: traveled to 40+ countries, lived in 7 countries

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LEADERSHIP & WORK EXPERIENCE

Head Teaching Assistant @ **Brown University Department of Computer Science** • Providence, RI   11/22 - Present

- Hire, lead, and manage a diverse team of over 140 teaching assistants across five semesters, driving course material development and innovation to enhance learning for over 1,200 undergraduate students
- Spearheaded improvements to course structure, contributing to higher student engagement and improved academic outcomes in Discrete Mathematics, Data Structures, and Machine Learning courses

Software Engineer Intern @ **MongoDB (.NET/C# Driver)** • New York, NY   06/24 - 08/24

- Designed and implemented an end-to-end solution for migrating query execution from the client to the server, improving performance by circumventing client memory bottleneck
- Enhanced the driver's Microsoft OData adapter library by applying metaprogramming techniques to support advanced query functions, including time and substring operations
- Identified and resolved multiple translation bugs, ensuring proper serialization of several data formats and comprehensive handling of nullable numeric conversions

Data Science Intern @ **Takachar** • Remote   01/24

- Played a pivotal role in transforming a project that directly contributed to reducing carbon emissions by developing an algorithm to detect spikes in biomass weight within agricultural waste reactors
- Processed and analyzed over 75 unique datasets to accurately track and plot weight fluctuations and the detected spikes, contributing to advancements in reactor optimization

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TECHNICAL PROJECTS

Colorizer - image colorization with convolutional neural networks   04/24 - 05/24

- Developed and trained a CNN to restore color in grayscale images, integrating techniques from multiple research papers
- Implemented the chosen VGG-19 U-Net architecture with perceptual loss using TensorFlow
- Created an open-source web application and API, enabling users to upload grayscale images and receive colorized outputs from the trained model

Data Spirits - an analysis of the correlation between alcohol consumption and sports betting volume   02/24 - 05/24

- Built a machine learning pipeline for data interpolation and model selection using Lasso, Ridge, ElasticNet, and XGBoost with cross-validation and hyperparameter tuning to optimize model performance and predict future trends
- Designed and launched an interactive website featuring dynamic visualizations to present findings and engage users

Scrappy - photo-sharing and scrapbook-creating social media webapp   11/22 - 12/22

- Developed dynamic site components with React and React Router, ensuring a seamless and intuitive user experience
- Integrated Google Authentication for secure user login, while designing a MongoDB database and Java backend for robust data handling and AWS S3-based image storage
- Implemented a natural language sorting algorithm with English feature vectors to streamline content discovery

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RESEARCH

Risk Score Optimization - using machine learning to generate integer risk score models for disease diagnosis   08/24 - Present

- Implemented randomized rounding during model initialization to enhance warm-start efficiency and reduce training time
- Developed a discretization algorithm for data preprocessing with logistic regression and quantile binning, enhancing scalability and accuracy using a greedy search for optimal splits based on NLL reduction
- Contributed to an accessible R package for seamless deployment of risk score modeling across healthcare applications