ALINA CAI

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EDUCATION

University of Waterloo   Waterloo, ON
Honours Bachelor of Computer Science   *Sep 2022 – Present*
Coursework: Algorithm Design and Data Abstraction, Functional Program Designing
Clubs: Women in Computer Science, Computer Science Club, Data Science Club, Intramural Basketball

SKILLS

Languages: Python, C, C++, SQL, HTML, CSS, Java, JavaScript, Ruby, LaTeX, Racket
Frameworks/Libraries: Pandas, NumPy, Matplotlib, SciKit-Learn, TensorFlow, Keras, Flask, Node.js, Kedro
Tools: Git, Linux, Bash, Anaconda, GCP, AWS, Azure, Jupyter Notebook, Seaborn, Prophet, Apache NiFi, Grafana

EXPERIENCE

Software Engineer | *BluWave-ai*   *May 2023 – Present*
- Devised an energy consumption predictor for the state of California, deploying the project on a **Google Cloud Platform VM**
- Optimized time series forecasting accuracy by employing **Prophet** and **LightGBM** regressors, obtaining an MAE of **1030 MW**
- Leveraged **data engineering** to automate the processing and storage of historical and live data from the **California ISO API**
- Applied **data analysis** techniques such as seasonal decomposition and autocorrelation to identify load and weather patterns
- Achieved real-time **data visualization** of load and weather by developing an interactive **Grafana** dashboard using **SQL** queries

President | *Lisgar Collegiate Institute Computing Club*   *Sep 2018 – Jun 2022*
- Organized and facilitated weekly technical and networking workshops, fostering programming interest to over **30** students
- Mentored **Python** foundations utilizing online resources, composing practice exercises to enhance concept comprehension
- Oversaw the development of an application-based **Arduino** project using **C++**, engaging the concept of traffic management

AWARDS

Euclid Mathematics Contest	99.6% percentile out of 22,372 contestants	*Apr 2022*
Canadian Computing Contest	83.5% percentile out of 3,262 contestants	*Feb 2022*
Canadian Music Competition	Top 5 national piano finalist	*Jun 2018*

PROJECTS

CITADEL / CITADEL SECURITIES Summer Invitational Terminal ⚲ | *Python, Java, Rust*   *Aug 2023*
- Competing in AI game where players program algorithms and battle them against each other in a live e-sports tournament

Weather in Air Traffic (CITADEL Summer Invitational Datathon) ⚲ | *Python, XGBoost, Google Colab*   *Jul 2023*
- Constructed a model using **XGBoost** predicting USA flight delays with **96%** accuracy, optimizing financial planning for airlines
- Administered rigorous **Exploratory Data Analysis** to uncover **feature importance**, improving the model precision by **95.7%**
- Employed **over-sampling** techniques to handle class imbalance in weather data, increasing the model F1-score by **95.9%**
- Authored an extensive **quantitative research** report articulating key findings in regional flight delay factors from severe weather

Titanic Survival Predictor ⚲ | *Python, Pandas, NumPy, Matplotlib, Scikit-Learn*   *Jun 2023*
- Performed feature engineering and data analysis to build a **ML** model predicting Titanic survival with an accuracy of **81.46%**
- Executed the optimization of a RandomForest Classifier from **scikit-learn**, applying train-validation split to mitigate overfitting

League of Legends Champion Randomizer ⚲ | *Python, HTML, Flask, CSS, BeautifulSoup*   *Jan 2023*
- Developed a video game web app using **Python**, **Flask**, and **CSS**, through rigorous web scraping enacting **BeautifulSoup4**
- Enabled the extraction of over **160** randomized champion profiles, designing an agile **HTML** template for dynamic display

Portfolio Website ⚲ | *JavaScript, HTML, CSS*   *Dec 2022*
- Designed and implemented an interactive personal portfolio website showcasing various projects using **HTML** and **JavaScript**
- Built the **front-end UI** using **CSS**, applying interactive animations and delivering an optimal multi-platform user experience

LEADERSHIP

Founder | *Alina's Music Studio*   *Mar 2019 – Jun 2022*
- Established a **start-up business** delivering professional piano and violin instruction, securing over **$38k** in operating revenue
- Facilitated excellence to over **50** students, evidenced by prestige competition awards and high scores, through tailored training

Concertmaster | *Lisgar Collegiate Institute Symphony Orchestra*   *Sep 2018 – Jun 2022*
- Directed an ensemble of over **30** musicians, providing practical expertise on technical intricacies and expressive interpretation
- Collaborated with the conductor and section leaders to cultivate a unified artistic vision and assure cohesive performances