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# Carlos Gustavo Salas Flores

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## Education

**Duke University/Duke Kunshan University**, *B.S. in Data Science & B.S. in Interdisciplinary Studies* *Durham, NC + Kunshan, China*

- GPA: 3.7/4.0.
- Dual-degree, Full Scholarship, and Dean's list (2019, 2020).
- Coursework: Data Structures and Algorithms, Data Analysis, Data Visualization, Economics, Econometrics, and Machine Learning.

## Experience

**Amazon** **May 2022 — Present**
*Data Science Intern* *Seattle, WA*

- Created an automated QuickSight dashboard and alarm that reduced AWS Lambda errors by 5% (Python).
- Handled a database with +10PB of data to create profiles of different customers (SQL, Pandas, and NumPy).
- Designed, built, and deployed a data analysis package that saved engineers +100 hours/week (Docker, S3, and AWS Lambda).
- Wrote research analysis and technical papers for scientists and shareholders in the AWS Lambda team.

**Sanford School of Public Policy at Duke University** **Jan 2022 — May 2022**
*Data Analysis Research Assistant* *Durham, NC*

- Gathered and cleaned US Census and survey data to design social policies that improved accessibility to non-English speakers.
- Compiled more than 15,000,000 data-points in a database (R).
- Produced info-graphics and dashboards to convey information to the general public.

**Data Science Research Center at Duke Kunshan University** **May 2021 — May 2022**
*Data Science Research Assistant* *Shanghai, China*

- Prepared financial data from the S&P 500 for algorithmic trading (NumPy and Pandas) and achieved 22% return of investment.
- Assessed Reinforcement Learning and Supervised Learning algorithms for time-series forecasting (PyTorch and Scikit-learn).
- Evaluated different approaches to pairs trading and optimized pairs trading selection by more than 50%.

**Duke Department of Physics** **Dec 2020 — May 2021**
*Software Engineer* *Durham, NC*

- Built an image reconstruction and pattern recognition algorithm to detect Dark Matter particles 1000 times faster.
- Implemented ML algorithms into integrated circuits (FPGAs) to improve the performance of Large Hadron Collider.

## Projects

**Real-Time Semantic Segmentation for Autonomous Vehicles** **Jan 2022 — May 2022**
*Duke Kunshan University* *Kunshan, China*

- Led research to improve Semantic Segmentation algorithms that optimized the trade-off between accuracy and efficiency.
- Implemented contemporary Machine Learning models in Python (ICNet, BiSeNet, DDRNet, and DFANet) using PyTorch.
- Conducted testing on Cityscapes (dataset) and achieved over 65% accuracy and less than 200 ms running time on each model.

**Airbnb Customer Segmentation** **May 2020 — July 2020**
*Duke Kunshan University* *Kunshan, China*

- Created 3D charts and graphs that facilitated the interpretation of different groups of suspicious users potentially running hotels.
- Optimized the data segmentation process by applying dimensionality reduction using Support Vector Decomposition (SVD) which reduced the running time in 10% (Pandas, NumPy, and Scikit Learn).

## Skills

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|---|---|
| **Programming** | Python, Java, C/C++, R, and SQL |
| **Technologies** | Docker, ECR, Lambda, S3, Git, and LaTeX |
| **Research** | ETL, Data Visualization, Statistics, and Time Series |
| **Data Science** | NumPy, SciPy, Pandas, Scikit-learn, PyTorch, Matplotlib, Seaborn, and Ggplot |
| **Software** | QuickSight, Tableau, OpenRefine, and Microsoft Excel |
| **Languages** | English (Fluent), Spanish (Native), and Chinese (Intermediate) |

## Achievements

- National Finalist at the Alibaba GET Challenge (top 12 out of 250+ teams).
- Professional Certificate on AI Engineering by IBM.