

+1 (984) 837-2465  
Durham, NC  
cs582@duke.edu

# Carlos Gustavo Salas Flores

GitHub: cs582  
LinkedIn: carlosgustavosalas  
Portfolio: cs582.github.io/portfolio/

## 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 Web Services

May 2022 — Aug 2022

*Software Engineer & Data Science Intern*

Seattle, WA

- Developed a web application for customer monitoring that helped to increase availability by 5% (Python).
- Handled 10PB+ of data for customer segmentation and created user profiles (SQL, Numpy and Pandas).
- Designed a ML pipeline using time-series to identify low availability customers with a 97% accuracy (Scikit-learn).
- Built and deployed a data analysis package that saved engineers +100 hours/week (EC2, Docker, S3, and Lambda).
- Wrote research analysis and technical papers for scientists and AWS Lambda stakeholders.

### 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).
- 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.
- Enhanced the data segmentation process by applying dimensionality reduction (SVD) which reduced running time in 10%.

## SKILLS

<b>Programming Languages</b>	Python, Java, C/C++, R, and SQL
<b>Technologies</b>	ECR, Docker, Lambda, S3, Git, and LaTeX
<b>Quantitative Research</b>	ETL, Data Visualization, Clustering, Regression, Statistics, and Time Series
<b>Data Science Libraries</b>	NumPy, SciPy, Pandas, Scikit-learn, PyTorch, Matplotlib, Seaborn, and Ggplot
<b>Analysis Software</b>	QuickSight, Tableau, OpenRefine, and Microsoft Excel
<b>Languages</b>	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.