Chris Guan

Software Engineer - Data Scientist/ Research Scientist

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Raleigh, NC ⚲

SUMMARY OF QUALIFICATIONS

- Analytics engineer with years of experience in software development and technical leadership.
- Research processes and enact innovative business solutions using machine learning, statistical methods, natural language processing, and recommendation algorithms.
- Leverage cloud computing platforms and large web-scale distributed systems to define recommended actions and develop best products and services.

SUMMARY OF SKILLS

- **Tools**   VS Code, RStudio, Tableau, GitHub, AWS (S3, EC2, RDS), GCP, Azure, Snowflake, Databricks
- **Languages**   Python, R, SQL, HTML/CSS/JavaScript
- **Python Libraries**   Pandas, Numpy, sklearn, PySpark, Matplotlib, Seaborn, TensorFlow/Keras, PyTorch, Django
- **Domain Knowledge**   Regression, Forecasting, Optimization, Classification, Anomaly Detection, Feature Reduction, Recommendation System, Customer Segmentation, Data Visualization

RELATED ACADEMIC AND WORK EXPERIENCE

- **Georgia Institute of Technology**   Atlanta, GA
  Master of Science, Computational Data Analytics   *Jan 2022 - Dec 2022*
  - **State-Based Chicken Audio Anomaly Detection Pipeline**
    * **Goal** Detect abnormal chicken sound in early stage to prevent spread of bird disease.
    * **Contribution** Team of 3. For each defined Markov state, labeled raw chicken audio for training/val/test set, trained autoencoder model with hyperparameter tuning for anomaly detection. Given a set of chicken recordings, built data processing pipeline that outputs anomaly detection results with timestamps.
  - **Meal Recommendations and Planning Application**
    * **Goal** Generate one-week customized meal recommendation plan and shopping list for working professionals.
    * **Contribution** Led a team of 4. Cleaned/transformed/tokenized dataset onto AWS RDS Postgre database. Created recommendation algorithm based on personal information/preference, Natural Language Processing (NLP) of recipe descriptions and reviews, and Knowledge Graph. Lastly, designed and built an interactive app, on Streamlit, to help user track dietary goals, provide feedback and download shopping list.

- **Timo Laboratories Inc.**   Morrisville, NC
  Product Manager   *May 2015 - Dec 2021*
  - **Impact** Grew revenue to 1MM in 2 years. Led engineering team of 5.
  - **Embedded** Customized and deployed various Bluetooth embedded solutions onto wireless speaker product lines.
  - **Android** Revitalized a smart speaker UI based off Android tablet, with Amazon Alexa voice control compatibility.
  - **Web** Developed company website with Django and Bootstrap framework, and deployed on AWS EC2 and S3.
  - **Analytics** Administered order data flow from distributors' orderings to fulfillment that cut processing time by 50%. Established inventory control model by using exponential smoothing forcasting and economic order quantity (EOQ) that lowered operating cost by 40%.

- **Greenwave Scientific Inc.**   Raleigh, NC
  Product Development Manager   *Nov 2012 – May 2015*
  - **Impact** Key contributor to revenue growth from 12MM to 25MM in 2 years. Led engineering team of 7.
  - **Embedded** Engineered TV tuner/demod evaluation platforms that saved evaluation time by 80%.
  - **Android** Launched hybrid set-top-box product based on Google TV platform. Optimized channel tunning algorithm that reduced scanning time by 60%, developed TV TS video stream demuxing middleware and DVR functionalities.
  - **Analytics** Boosted antenna upsale program by collecting user zipcodes and channel scanning results.

- **SmallHD, LLC**   Cary, NC
  Senior Software Engineer   *Mar 2010 – Nov 2012*
  - **Impact** Employee #2. Helped drive revenue growth from 0.5MM to 12MM in 2 years.
  - **Embedded** Revamped Mstar embedded TV platform solution for HD field monitor products.
  - **FPGA** Fully implemented HDMI and SDI broadcasting signal cross conversion on Lattice FPGA from scratch. Refined on-display analytical tools (peaking, histogram, etc.) to assist pro-videographers when shooting on-site.

EDUCATION

- **North Carolina State University**   Raleigh, NC
  Master of Science - Mechanical and Aerospace Engineering   *Jul 2007 - Oct 2009*

- **Harbin Institute of Technology**   Harbin, China
  Bachelor of Science - Control Science and Engineering   *Jul 2002 - Jun 2006*