

CHEN YAN

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Professional Profile

My main areas of expertise are artificial intelligence, data analytics, software development and computer vision. I have experience in the whole software development process (Web and Android App), big data management systems and cloud platforms (AWS). I am familiar with data analytics (Java, Python, Tableau), statistical modelings, deep learning, natural language processing and image processing. I enjoy accepting new challenges and take delight in helping others. Treat each work seriously and responsibly with strong organization ability and team spirit. Additionally, I am an independent thinking, self-motivated team player with a high passion for data science and machine learning. It is quite enjoyable to discuss and have a logical problem solving process with my team.

I am currently a **Research Engineer (Data Scientist) in National University of Singapore**. My major is Computer Science and Design (Data Analytics Track), with a minor in Artificial Intelligence at Singapore University of Technology and Design. I have four years python and three years Java, Javascript, CSS, html and SQL experience. I am a young, bright, energetic girl with strong career ambition.

Education and Training

Singapore University of Technology and Design (SUTD)

May 2018 to May 2021

Focus Track: (Honours degree) Bachelor of Computer Science and Design (Data Analytics) with AI minor

Experience

National University of Singapore

Singapore

Research Engineer (Data Scientist) in SIA-NUS Colab (Full-Time Job)

May 2021 - Present

- Develop and deploy novel and robust revenue management algorithms that are robust with respect to forecasting errors and booking curve assumptions for Singapore Airlines in aviation industry
- Develop an algorithm and understanding into airline total revenue optimization, to understand the impact of bundle pricing, since increasing percentage of revenue comes from ancillary items, such as luggage space, extra leg rooms etc.
- Using machine learning and deep learning algorithms (Pytorch) to analyze the characteristics of data and model the customers behaviors of buying ticket with our projects in aviation industry
- Build a real-time relational database (SQL) with Amazon Web services for our project.
- Lead and build a visualization tools for algorithms (Java) results with Tableau
- Lead and develop and deploy a state-of-the-art simulation Web platform (React and Vue) to reflect the dynamic effect of pricing and revenue management decisions, capable of taking into account real-time reactions and interventions by market competitors.

Panasonic (The fortune 500 Companies)

Singapore

IP-3D Team intern - Face recognition with temperature scanning integrated with HRMS

May 2020 - Sep 2020

- Develop an android app that integrates with face recognition, temperature scanning and Human Resource Management System.
- Integrated with FLIR camera thermal SDK and conduct testing for temperature measurement correction

- Integrated with Face recognition system and do fitting works for better accuracy based on different deep learning models(RNN,CNN,Resnet50,HMM)
- Set up back-end database by using relational database(SQL) for Human Resource Management System

Merck Sharp & Dohme (The fortune 500 Companies)

Data Analysts Intern - logistics and transportation department

Singapore

May 2019 - Sep 2019

- Freight bill Data analysis by SQL and Python
- Optimize transportation operations and assist companies in resource allocation and checking bills details.

New oriental education and technology group Inc.

IELTS Teaching Assistants

Hangzhou, China

Mar 2018 - May 2018

- Help teacher charge students, grade homework and PPT preparation
- Communicate with students to help them in physiology and psychology

BI BI Bear's international chess company

Chess tutor

Xi'an, China

May 2019 - Sep 2019

- Teach chess for kids
- Conduct open class to introduce chess to more kids

Academic Projects

University Final Year Project - (Web Development + AI)

DB Schenker Employee Engagement Indicator

Jan 2021 - May 2021

- Manage and lead a seven members team to implement this AI project with jira management tool
- Identify the well-being, emotions, and health status of the employees using facial expression recognition.
- Develop and design a survey to analyze the turnover rate with Natural Language processing and machine learning.
- Lead and build an end-to-end machine learning pipeline based on structured and unstructured data to provide results (AI and machine learning(logistic regression, SVM,RandomForest, CNN).)
- Lead and build a cloud database with AWS cloud service to implement a real-time non-relational database(MongoDB).
- Implement a great web frontend with Vue and FastAPI to show the visualization of analysis results.
- Experience a full software development life cycle with Selenium,Postman and Mocha testing tools

CIKM2020 AnalytiCup - (Deep learning) Covid19 Retweet Prediction Challenge

Jan 2021 - May 2021

- Modeling retweet behaviors to predict the number retweets with a deep neural network-based retweet prediction method by Pytorch
- Use useful feature extraction techniques for retweet prediction by cluster(K-means clustering) and a multilayer perceptron (MLP).
- Use a stacking-based ensemble method to provide the final predictive result for the competition

Kaggle Computer vision Competition - (Computer vision)

Human Protein Atlas Single Cell Classification

Jan 2021 - May 2021

- Design CNN models(NFNet, EffNet,Resnet,Googlenet,etc) for segmenting and classifying the cells in the images(37472 samples) with tensorflow.
- Predict the labels of those segmented cells and classifying each individual cell with precise labels

Deep Learning - Covid-19 Chest X-ray image classification

Jan 2021 - Mar 2021

- Design two CNN models from scratch with Pytorch and Scipy.
- Compare the accuracy between two binary classifiers and one multiple binary classifier of CNN.
- Classify each Chest X-ray image with precise label(covid,non-covid,normal)

Machine Learning - (Natural Language Processing) Sentiment analysis

Sep 2020 - Dec 2020

- Implement a sequence labelling model for informal texts based on HMM algorithm.
- Use CBOW , Skip-Gram ,TF-IDF for word embeddings.

- Design and train a complex, intelligent sentiment analysis algorithm model from scratch for social media text based on LSTM,HMM and other RNN models.

Computational Data Science - (machine learning) Hit Songs Prediction Sep 2020 - Dec 2020

- Collect data with features from Spotify API for data preparation with Pandas.
- Train optimization algorithms for parameter estimation which includes Stochastic Gradient Descent, Least-Squares, Newton's Method with Scikit-learn and keras.
- Build statistical models to do predictive analytics for songs with supervised learning and clusters models.
- Optimize for hit songs prediction with different deep learning models (RNN and CNN) and reinforcement learning.
- Use Streamlit for data visualization to help people to check the result for hit songs prediction.

Database and big data - Auto Production and Analytic systems for books reviews Sep 2020 - Dec 2020

- Focus on design and implementing the Production and Analytic system of book reviews with AWS Services.
- Clean and stored data to MongoDB and MySQL for production system
- Transfer them into HDFS with Hadoop to implement whole analytic system with spark in Linux environment
- Provide a real-time book recommendation and searching system

Elements of Software Construction -Web development with Rainbow Platform Jan 2020 - May 2020

- Develop a web front-end and dashboard with HTML, CSS, and JavaScript with Vue front-end framework.
- Develop test plans(Unit testing,End-to-end testing, Performance/stress testing, Functional testing) with Selenium and implement Socket server testing for back-end.
- Use MongoDB to set up a database to store user information, messages and other records.

Android App development- Automatic speech recognition and Hand-writing recognition Sep 2019 - Dec 2019

- Use Google Cloud vision and Speech-to-Text API to transcribe speech words and handwrite text into formal texts.
- Set up a friendly front-end with Firebase's async API to make everything happen in real-time efficiently and reliably.

Computer Structures - FPGA Games Design Jan 2019 - May 2019

- Build electronic games that are educative and help young people learn mathematics and/or logics with FPGA
- Build a game varying from MONOPOLY.
- Implemented Beta architecture in Mojo.

Skills and Tools

- Operation system: Windows, MacOS, Linux, Android
- Big Data : Tableau, MongoDB, MySQL, Hadoop & Spark
- Programming languages: Java, C++, Python, Node.js, JavaScript, CSS, html
- Statistical software : Tableau,MATLAB, SQL, NumPy, Pandas
- Proficient in Microsoft office
- Strong knowledge of statistics, probability, and experimentation theory.
- Proficient in Illustrator, Photoshop, Premiere pro
- Basics skill in AutoCAD, SolidWorks,3D printing Arduino and FPGA
- Fluent in Chinese and English (Verbal and Written), primarily Russian.
- Having a strong leadership and hands-on skills
- Good at problem-solving, analytical skills, business skills and learning ability.
- Able to handle multiple, simultaneous projects under deadline pressure and high adaptability to the environment.
- Good consciousness of teamwork, study ability, communication skills and interpersonal skills

CO-Curricular Activities

SUTD Go Club

President

Jan 2019 to Jan 2020

- Act as a president in the SUTD GO Club, in charge

of making activities plans, strategy, objectives, distributing works to different people, making strategic and operational recommendations to

achieve training goals and managing the development and building of SUTD Go club.

- Connect other universities and the go association in Singapore to hold competitions and activities frequently.
- Successfully held the First Second SG Wei qi Fun Congress of SUTD in Oct 2019, Second Annual SG Wei qi Collegiate Tournament in Oct 2018, Achieved the 2nd place in category A and the First Annual SG Wei qi Fun Congress in Oct 2018.

SUTD Funktion Club

Member

May 2018 to present

- SUTD lunch time performance(term1,2&3)
- Completed “scape locking talent development program”
- Join in a battle competition in scape locking development program

Marathon Competition

- Joined 2019 Standard Chartered Singapore Marathon
- Joined 10km Safari Zoo Run in 2019
- Joined 10Km Race Against Cancer Activity held by Singapore cancer society for charity.

Personality and Hobbies

- Enjoy participating in extreme sports and outdoor activities (Joined Marathon every year, Been to four countries(Australia,Dubai, Switzerland,NewZealand)for skydiving, swimming every week , Climbing)
- Enjoy reading poetry, psychology, human nature and philosophy books.
- Love dancing and music
- Strong and meticulous logical thinking ability, have a nimble mind and unremitting exploration spirit
- High-organized, detail-oriented, quiet,lively and creative girl.
- Positive, Lively, cheerful,outgoing and warm-hearted girl

Awards

- Mitsubishi Corp Award in 2020
- Best SAT solver and 2D challenge 2nd winner in 2019