

# Xin Li

## Summary

Hello! I'm a PhD student in Electrical and Computer Engineering at Rutgers University New Brunswick under the supervision of Professor Anand Dilip Sarwate. I'm looking for full-time internship positions such as data scientist, machine learning engineer, research engineer/scientist, etc. My primary interests and specialties include deep learning, statistical machine learning, pattern recognition, high dimensional data analysis, software development, etc.

## Academic Qualifications

- Rutgers University, PhD in Electrical and Computer Engineering, GPA 4.0/4.0, 2021 – Present, New Brunswick, NJ
- Boston University, M.S. in Electrical and Computer Engineering, 2017–2019, Boston, MA
- North China Electric Power University, B.E. in Communication Engineering, 2013 – 2017, Beijing, China

## Technical skills

- Specialties: deep learning, statistical machine learning, pattern recognition, high dimensional data analysis, tensor learning, optimization, pattern recognition, reinforcement learning, time series analysis, software development, etc.
- Development Skills: Java (3 yrs+), Python (3 yrs+), C++ (4 yrs+), MATLAB (5 yrs+), SQL (2 yrs+), etc.
- Software Frameworks: TensorFlow, Java Spring Framework, PyTorch, Scikit-Learn, NumPy, Numba, CUDA, Tensorly, etc.
- Cloud Frameworks and Container Technologies: Amazon Web Services, Google Cloud, Heroku, Docker, Singularity, etc.
- Others: Web-Scraping using Python Requests, BeautifulSoup, and Selenium, etc.

## Research Experiences

July, 2021 – present **Research Assistant, Rutgers University, New Brunswick, NJ.**  
*Principal Investigator: Professor Anand Dilip Sarwate*

Responsibility: Conduct research regarding high dimensional data analysis such as tensor decomposition, completion, and regression, explore applications of tensor learning such as computational phase retrieval, hyperspectral imaging, recommender systems:

- Researched and derived the higher-dimensional formulation of the computational phase retrieval problem using the framework of canonical polyadic (CP) tensor decomposition.
- Designed and implemented a computational phase retrieval algorithm using tensor decomposition formulation with TensorFlow, bringing down the sample complexity by 60% with similar level of accuracy compared to the conventional matrix completion formulation.

February – May, 2019 **Research Assistant, Boston University, Boston, MA.**  
*Principal Investigator: Professor Hadi Tavakoli Nia*

Responsibility: Designed and conducted Predicative Analysis using 3D Convolutional Neural Network for Lung Cancer patient CT scan data:

- Implemented a data pre-processing routine to efficiently perform operations including data cleaning, image segmentation for the CT Scan DICOM data.
- Designed and implemented a 3D Convolutional Neural Network architecture for 3D image visual recognition to classify patients' CT Scan based on the U-Net and C3D-Net Architectures.
- Resolved the data imbalance problems by regularization techniques including dropout layers, batch normalizations, and reformatting the loss function, etc.

## Working Experiences

September – present, 2021 **Teaching Assistant- ECE567 Software Engineering, Rutgers University, New Brunswick, NJ, USA.**  
Responsibility: Office hours, grading, etc. for the Software Engineering course.

January – June, 2021 **Teaching Assistant- ECE312 Discrete Mathematics, Rutgers University, New Brunswick, NJ, USA.**  
Responsibility: Recitations, grading, and office hours for the Discrete Mathematics course.

2019 – 2020 **Management Associate - Industrial IT Engineer, Hilti (Shanghai) Co. Ltd., Shanghai, China.**  
Responsibility: Design and Implement an Industry 4.0 solution for the manufacture plant including Spring Web development, SQL Server Management, etc.

## Project Experiences

### MarketHive: A Second Hand Market Android Application.

Responsibility (Backend Lead): Designed and implemented backend RESTful webservice for the Android application (Gitlab Repository: <https://gitlab.com/flag-camp-team-5/backend-restful-web-service>):

- Designed and implemented the software architecture to expose the data to the RESTful API endpoints for the Android frontend using Spring Boot and Spring Data JPA.
- Deployed the backend framework to AWS Elastic Beanstalk for real-time access and front-end testing
- Connected the backend to Google's Firebase authentication for added security supporting multiple login account types such as Google, Facebook, Mobile, etc.

### JobFlix: A Job Recommendation Website based on Amazon Web Service.

Responsibility: Designed and implemented a Job Recommendation Website hosted on Amazon Web Service:

- Implemented a RESTful API to handle HTTP requests and responses using Java Servlets.
- Utilized MySQL database on Amazon RDS to store the job posting data posted from GitHub Job API.
- Used MonkeyLearn API to extract keywords from job specifications.
- Designed a content-based recommendation algorithm to provide the job recommendation function for the website based on user's favorite jobs.
- Deployed the project to AWS EC2 for public access.