JUNBIAO LU

Research Interest: Statistics, Algorithm, Random System
Phone Number: (+86)18627582312 ⋄ Email: lujunbiao1998@hotmail.com
Personal Website: benjaminlu98.github.io

EDUCATION

Beijing University of Posts and Telecommunications (BUPT) Aug 2016 - Jul 2020
B.S. in Applied Physics

- GPA: 3.74/4.0, (average score: 90/100, rank: 2/55)
- Major GPA: 3.80/4.0 (average score 93/100)
- Major Courses: Mathematic Analysis 95/100, Advanced Algebra and Geometry 95/100, Methods of Mathematical Physics 92/100, Probability Theory and Mathematical Statistics 96/100, Thermodynamics and Statistical Physics 89/100, Data Structure, The C programming language 89/100, Fundamentals of Scientific Computing 94/100, Fortran Scientific Computing 96/100

Beijing University of Posts and Telecommunications Sept 2021 - present
M.S. in Physics

- GPA: 3.80/4.0
- Courses: Real Analysis 99/100, Nonlinear Functional Analysis 97/100, Stochastic Process 93/100, Stochastic Analysis 96/100, Applied PDE 92/100, Advanced Econometrics 84/100
- Auditing and Self-learning: Advanced Probability Theory (text book: Bingyi Jing), Statistical Inference (text book: Casella), Mathematical Finance (text book: Sheldon Ross)

RESEARCH EXPERIENCE

Growth Rates of Random Matrix Products Sept 2019 - Sept 2020
Second Author, School of Science, BUPT

- Calculation of the exponent of multiple random matrices with discrete and continuous distributions
- Validity test by generating the exponent using invariant polynomial derived from the original method
- Application to the calculation of Ising model's free energy in random on-site field

Bankruptcy Mechanism in Complex Network May 2023 - Present
Submitted to Europhysics Letters, First Author, School of Science, BUPT

- Conceptualization of evolutionary game with bankruptcy mechanism
- Model simulation using Monte Carlo method on complex networks (square lattice, ER network)
- Data visualization and statistical analysis
- Original draft writing and review

WORK EXPERIENCE

Breast Cancer Detection using Deep Learning Jun 2022 - Jul 2022
Research Intern, Deepwise.Co.Ltd.

- Task: develop a image classification model using deep learning
- Data processing: obtain the lesion images and label from hospital, adjust the size of the benign area around the lesion to crop the image, rotate and symmetrize image to increase sample size, and segment the data set
- Model training: select different kinds of ResNet, construct and train binary classification model

· Evaluation: precision 94%, recall 90%, f1-score 91.96%

Named Entity Recognition in Search Query Nov 2023 - Jan 2024
Research Intern, Zuoyebang.Co.Ltd.

· Task: build a named entity recognition model based on 500,000 gpt4-annotated data for the article query
· Data processing: design entities and GPT prompt, generate labels, add some artificial data
· Model training: use Bert, Roberta and CRF(Conditional Random Field), construct and train a multi-classification model
· Evaluation: precision 97.26%, recall 97.49%, f1-score 97.37%
· Official release: convert trained model into a low-latency online model (pytorch-ONNX-Triton)

AWARD & STANDARD TEST

Award

· Mathematics Competition, Third Prize, BUPT Jul 2017
· China Undergraduate Physics Tournament, Third Prize, Beijing May 2018
· HUANGKUN Scholarship, Institute of Semiconductor CAS Dec 2018

Standard Test

· GRE General: V157 Q168 AW3.0 May 2019
· GRE Subject Physics: 900 (outperform 83% participants who took the test) Dec 2019
· TOEFL(ibt): 110 (Reading 29, Listening 30, Speaking 26, Writing 25) Sept 2019

SKILLS

· Coding: Python (Pytorch), Fortran, Matlab, Origin, LaTeX
· Language: Fluent English, Native Chinese

MISCELLANEOUS

I love tennis, English comedy and English fiction. My tennis level is 3.5. My favourite novel is the Neapolitan Novels by Elena Ferrante