

## LUO Ziyan

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From: Beijing, China – Studying: Beijing University of Posts and Telecommunications

### Education

**Beijing University of Posts and Telecommunications (BUPT)**

Sep. 2016 – Jun. 2020

BEng in Computer Science and Technology

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| <ul style="list-style-type: none"><li>● <b>GPA:</b> 3.75/4 (3.9 for junior/senior)</li><li>● <b>TOEFL scores:</b> 104</li><li>● Offers: <b>UCSD (MSCS)</b>, CMU (INI, 7k\$), UChicago (CS-Predoc, 3.7k\$), USC(MSCS) ...</li><li>● A BUPT scholarship recipient in each academic year till now</li><li>● A member of YePeiDa Innovation College (top 60 students among 3600 undergraduates year-round)</li><li>● A Top 3 student in the major of Software Engineer in the first semester to have chance to switch major</li></ul> | <ul style="list-style-type: none"><li>● <b>Average Scores of Core Courses:</b> 91/100</li><li>● <b>GRE scores:</b> 327 (157 + 170 + 3.5)</li></ul> |
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### Research

**Spatio-temporal Trajectory Prediction** | *Data Mining, Deep Learning*

Apr. 2019 – Oct. 2019

- Initiated the research and collaborated with researchers at the Institute for Network Sciences and Cyberspace of Tsinghua University, supervised by Wang Jilong, chair of the Asia Pacific Advanced Network (APAN)
- Processed human spatio-temporal trajectory data from publicly available GTSM datasets
- Designed an advanced deep learning model composed of an attentive mechanism which helped learn long-term knowledge and a well-designed convolutional network with hybrid dilated and separable filters, which effectively extracted high order sequential patterns and smoothed gridding artifacts of hybrid dilation
- **Second author** of the paper among 4 authors, which is accepted by **WSDM, 2020** (the **top 7%**, oral paper, DOI: 10.1145/3336191.3371846), a leading conference in data mining field

**SRG, Microsoft Research Lab – Asia (MSRA)** | *Reinforcement Learning, Information Retrieval* Oct. 2019 – Feb. 2020

- Using Deep Reinforcement Learning algorithm for Inverted Index Match Plan Generation to replace current handcraft rules at the L1 stage of the query searching process in Bing
- Collaborating with the product team of Bing and researchers at Systems and Networking Research Group (SRG) of MSRA, supervised by Chen Qi, Xue Hui, Senior Researchers in MSRA
- Inventing **PASAC** to adapt to our scene (a **discrete-continuous hybrid action space**), maximizing both entropy & Q-value; **SPER** to address that highly prioritized samples center on a small range of the reward space
- As the **first author** among **10 authors**, the paper is in submission to **WWW, 2021**

**APDC** | *Natural Language Processing, Natural Language Generation, Reinforcement Learning*

July 2020 – Sep. 2020

- Inventing **Adaptive Prior-Dependent Correction (APDC)** to enhance RL in language generation tasks: Leveraging the distribution generated by computing the distances between the ground truth and all other words to correct the agent's stochastic policy, to alleviate the **deviation ignorance issue**
- **Advantage-function-weighted Policy Gradient (APG)**: Estimating the advantage function with the difference of the Q-values using the prior knowledge of “afterstate”
- On three tasks of NLG (NMT, image captioning, abstractive text summarization), our method consistently outperforms the state-of-the-art RL-based approaches
- As the **second author** among **3 authors**, the paper is in submission to **AAAI, 2021**, now promoted to phase 2

**RLMob** | *Reinforcement Learning, Data Mining*

Apr. 2020 – July 2020

- Deep Reinforcement Learning for processing human sequential trajectory data

- Formulate the problem that predicting successive points as a MDP and create an simulator environment
- As the **first author** among **2 authors**, the paper is in submission to **WWW, 2021**

### Professional Experience

#### **ZTE-CE Internship** | *Computer Networks*

Aug. 2019 – Sep. 2019

- Worked on 5G Wireless Network Product Operation and Maintenance Project, including networking and configuring base station as an implementation engineer
- Designed a topology structure of an enterprise Intranet with another intern that met all the needs of customers

### Projects

#### **Compiler from Pascal Language to C Language** | *Compiler Principle and Technology*

Jul. 2019

- Collaborated with another student to complete a compiler from Pascal to C within 5 days
- Conducted grammar design, lexical analysis, syntactic analysis, semantic analysis, and the generation of target code using bottom-up techniques of S attribute

#### **DNS Relay** | *Computer Networks*

Mar. 2019 - May 2019

- Independently completed a simple DNS relay to implement DNS Protocol
- Realized packet parsing, relaying, database query, learning from new messages, etc.

#### **Ether Forum System** | *Software Engineering*

Nov. 2018 - Jan. 2019

- Independently designed a forum system with C++/QT, fulfilling all basic functions with elegant interface and user-friendly interaction

### Skills & Core Courses

- Computer Skills: C/C++, Python, Pytorch, SQL, Matlab, UML, YACC, VHDL, Linux(Shell) ...
- Core Courses: Computer Networks, Algorithms & Data Structures, Operating System, Compiler Principle & Technology, Microcomputer System & Interface Technique, Software Engineering, Principles of AI, Principles of Database Systems, NLP, Computer Architecture, Mobile Communications...

### Competitions & Awards

- COMAP Interdisciplinary Contest in Modeling – **Meritorious Winner**: won the prize by establishing a model for measuring and analyzing the fragility of countries and finishing the paper Feb. 2018
- National English Competition for College Students – **Third Award** May 2018
- Chinese Chemistry Society's National Chemistry Olympiad for High School Students – **First Prize**
- Grade Certificate for Music Examination, **Piano Grade Ten**

### Extracurricular Activities & Interests

- **Music Composition**: I am a well-known electronic music composer, creating experimental music in miscellaneous genres including piano improvisation, symphony, 8-bit, hardcore, dubstep. Up till now, I have done more than 20 music compositions (in 30+ hrs. for each) with 250,000+ plays and 1000+ followers at NetEase Cloud music and many of them are included in well-known music games.

**My Portfolio**: <https://soundcloud.com/sunsetray>

Since Jun. 2018

- Student Union year-end work review presentation (Director) Dec. 2017
- **Interests**: Music Composition, Sports (table tennis, badminton, tennis, basketball, billiard etc.), Chemistry