

# Shuguang Chen

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## Education

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**Ph.D. Student in Computer Science** Aug 2018 – Present  
University of Houston, Houston, TX, United States  
Research: Natural Language Processing, Advisor: Dr. Thamar Solorio  
GPA: 3.84/4.0

**B.S. in Computer Science and Technology** Sept 2014 – July 2018  
Beijing Forestry University, Beijing, China  
Thesis: Music Generation Using Recurrent Neural Networks  
GPA: 82.33/100

## Research Interest

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**Natural Language Processing**, with a special focus on Named Entity Recognition and linguistic code-switching on noisy data.

## Work Experience

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**Web Application Developer**, School of Information, Beijing Forestry University Nov 2016 - Jan 2017

- Developed a Cultural and Creative Industry Public Services platform for the University
- Engaged in UI design and implementation with Struts, JSP, Servlet, HTML5, CSS, etc.

## Research Experience

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**Project: Multimodal Named Entity Recognition on Social Media** Sept 2019 – Present  
Supervisor: Dr. Thamar Solorio

- Conducted research on multimodal information extraction, fusion and inference
- Worked on analysis of image representations and multimodal fusion techniques

**Project: A Super Simple Approach to Keep NER Models Crisp** June 2020 – Present  
Supervisor: Dr. Thamar Solorio

- Designed a simple method to detect posts that are becoming trends on social media platform
- Presented a strategy to efficiently update model parameters by selecting the most informative
- Improved the performance of NER models with a multi-task approach

**Project: Reducing Rote Memory Learning of Highly Frequent Entities** Sept 2020 – Dec 2020  
Supervisor: Dr. Thamar Solorio

- Investigated the performance in entity memorization and contextual generalization of NER models
- Proposed potential solutions to reduce reliance on memorization based on the observations from the datasets and the fine-tuned model's behavior

**Project: Handwriting Recognition with Recurrent Neural Networks (RNNs)** Mar 2017 – May 2018  
Supervisor: Dr. Wei Men

- Achieved handwriting recognition, study, and generation functionalities with neural networks.

- Trained the RNNs with a mixture dense layer and the source data of different handwriting styles.
- Built a user-friendly interface to simplify data input, parameter adjustment, results display, etc.

### Project: Speech Recognition and Processing

Mar 2015 - Nov 2015

Supervisor: Dr. Yanyan Xu

- Worked on extracting and analyzing the features of human voice
- Performed the synthesis of voice signals with Pitch Synchronous Overlap and Add (PSOLA).
- Used the random forest algorithm and sufficient samples to train the system.

### Publications

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- **Can images help recognize entities? A study of the role of images for Multimodal NER.** Shuguang Chen, Gustavo Aguilar, Leonardo Neves, Thamar Solorio. Submitted to NAACL 2021.
- **Reducing Rote Memory Learning of Highly Frequent Entities.** Gustavo Aguilar, Shuguang Chen, Mona Diab, Thamar Solorio. Submitted to NAACL 2021.
- **Mitigating Temporal-Drift: A Super Simple Approach to Keep NER Models Crisp.** Shuguang Chen, Leonardo Neves, Thamar Solorio. Submitted to EACL 2021.

### Honors

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#### Awards & Scholarship

- **School-level Outstanding Graduate Awards**, Beijing Forestry University 2018
- **Academic Merit Scholarship**, School of Information, Beijing Forestry University 2017

#### Academic and Scientific Competitions

- **Bronze Metal**, Association for Computing Machinery - China Collegiate Programming Contest 2016
- **2nd prize**, The 7<sup>th</sup> Blue Bridge Cup National Software Competition Heats of Beijing Region 2016
- **2nd prize**, The 15<sup>th</sup> Peking University Plug Palmer Cup Program Design Competition 2016

### Technical Skills

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- **Programming Languages:** Python, C/C++, Java, C#
- **Web Programming:** JavaScript, HTML/CSS, Spring, Hibernate, Django
- **Database Engines:** MySQL, SQL Server
- **Libraries:** Scikit-learn, NumPy, Keras, PyTorch