Ze-Yuan "Zack" Hu

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EDUCATION

University of Texas **Austin, TX** **Sept 2017 – May 2019**
- M.S. in Computer Science. (GPA: 4.00/4.00)

University of Wisconsin **Madison, WI** **Sept 2010 – Dec 2014**
- B.A. in Computer Science. (GPA: 3.74/4.00)
- B.A. in Economics with Honors. (GPA: 3.85/4.00)
- B.A. in Mathematics. (GPA: 3.81/4.00)
- Recipient of 2013 Honors Summer Sophomore Research Apprenticeship
- Recipient of 2012 Meek Bishop Scholarship in Economics, *top 2 out of 500 economics major students*

WORK EXPERIENCE

Software Engineer **IBM** **August 2015 – August 2017**
DB2 LUW federation team
- Constructed `Hive` and `Impala` wrappers with `C++` and `Java` to support federation database between traditional RDBMS and Hadoop-based data warehouse solution
- Created automated setup tools with `Perl` and `Shell` that reduce product configuration time by 75%
- Enhanced server option optimization tools using `C` to reduce federation database performance tuning time by 90 % and enable the capability of tuning the product against Hive, Impala, and Spark
- Resolved over 20 defects, including a severe memory leak issue that impacted a $1.6 million deal. *Awarded IBM Manager's Choice Award 2016*

Research Assistant **UW-Madison** **May 2013 – April 2014**
- Applied Spatial Gaussian Process & Dirichlet Process on fMRI data with `MATLAB` and improved power of testing on predicting Dementia based upon pixel value of the scan by 5 %

Research Assistant **UW-Madison** **September 2012 – May 2013**
- Implemented SVM using `Python` to examine the impact of Feedback on children's learning outcomes
- Examined the statistical correlation between fMRI data and DTI data in measuring the brain activity of children during their learning process with `Python`

PROJECTS

- **HyperPebblesDB** (2018), a Key-Value store that is part of LevelDB family with focus on reducing write amplification. Written in `C++`
- **Distributed Key-Value Store** (2018), built a Distributed Key-Value Strore with `Python` that uses eventually consistency model with two session guarantees: *Read Your Writes* and *Monotonic Reads*
- **Identifier Inference through Neural Network** (2017), built N-gram and Neural Network language models using `tensorflow` to study the *Identifier naming convention* problem
- **Exploring Stereotypes and Biased Data with the Crowd** (2017), examined the behavior of crowd on Amazon Mechanical Turk to help with the bias detection in datasets for machine learning tasks
- **Shift-Reduce Parsing** (2017), a shift-reduce parser using both a greedy model and a global model with beam search
- **Sequential CRF for NER** (2017), a system that uses HMM model for POS tagging and CRF model for NER
- **Watson Introspector** (2016), a cognitive tool built in Python on IBM Bluemix for understanding software, answering questions, and interacting with software architecture and data flows in 3D. *Awarded Second Prize in IBM China Development Laboratory Hackathon.*

- **OptiTimal** (2013), an android application that allows user to log their time usage and generate a simple statistical report that characterizes their time management style.
- **Checker** (2012), an AI engine developed in Java for checker game with alpha-beta pruning search algorithm, depth-first iterative deepening method.

TEACHING

- NEU466M Quantitative Methods in Neuroscience (Spring 2018, UT Austin)
  `http://ctcn.utexas.edu/quantitative-methods-neuroscience/`
  Teaching Assistant
- M408K Differential Calculus (Fall 2017, UT Austin)
  `https://www.ma.utexas.edu/users/pmorales/syllabus/syllabus.php?unique=53780`
  Teaching Assistant

SPECIALIZED SKILLS

- **Languages:** C++; C; Java; Shell; Python; SQL; MATLAB
- **Software:** Db2; Tensorflow; Keras; Git; ClearCase; Hive; Impala; Maven; Hadoop
- **Graduate Coursework:** Machine Learning, Structured Models for NLP, Human Computation & Crowdsourcing, Natural Language Processing, Semantics, Distributed Systems, Operating System

SERVICE AND SOCIETIES

- UTCS Master Admission Committee (Jan 2018 – March 2018), Member
- IBM Diamond & Ring Toastmaster Club (Jun 2016 - Jun 2017), President