

# Zeyuan Hu

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## EDUCATION

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| <b>University of Texas</b>  | <b>Austin, TX</b>  | <b>Sept 2017 – May 2019</b> |
| <ul style="list-style-type: none"><li>• M.S. in Computer Science. (GPA: 3.81/4.00)</li></ul>  |                    |                             |
| <b>University of Wisconsin</b>  | <b>Madison, WI</b> | <b>Sept 2010 – Dec 2014</b> |
| <ul style="list-style-type: none"><li>• B.A. Triple Major, Computer Science, Economics with Honors, Mathematics. (GPA: 3.80/4.00)</li></ul> |                    |                             |

## WORK EXPERIENCE

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| <b>Cloud Architect Engineer</b><br>Omnia Storage Team   | <b>State Street Financial Service</b> | <b>June 2019 – September 2019</b> |
| <ul style="list-style-type: none"><li>• Built auto-deployment system of IBM Cloud Object Storage in multi-site clusters using <u>Ansible</u>, <u>Docker</u></li><li>• Developed a distributed workload generator and performance benchmark toolkit written in <u>Go</u> with <u>Redis</u>, <u>InfluxDB</u>, <u>MongoDB</u> and <u>Elastic Search</u></li></ul>  |                                       |                                   |
| <b>Software Engineer</b><br>DB2 LUW federation team   | <b>IBM</b>                            | <b>August 2015 – August 2017</b>  |
| <ul style="list-style-type: none"><li>• Constructed <u>Hive</u> and <u>Impala</u> wrappers with <u>C++</u> and <u>Java</u> to support federation database between traditional RDBMS and Hadoop-based data warehouse solution</li><li>• Created automated setup tools with <u>Shell</u> that reduce product configuration time by 75%</li><li>• Enhanced server option optimization tools using <u>C</u> to reduce federation database performance tuning time by 90 % and enable the capability of tuning the product against Hive, Impala, and Spark</li><li>• Resolved over 20 defects, including a severe memory leak issue that impacted a \$1.6 million deal</li></ul> |                                       |                                   |
| <b>Software Engineer Internship</b><br>HPC infrastructure team  | <b>Schlumberger</b>                   | <b>May 2018 – August 2018</b>     |
| <ul style="list-style-type: none"><li>• Implemented a monitoring component of the in-house High-Performance Computing (HPC) engine in <u>C++</u> to provide the fault tolerance and handle the “straggler” problem</li><li>• Employed SGD algorithm to dynamically learn the best timing for backup executions of the in-progress tasks based on the computation task characteristics</li><li>• Built a C++ code generator that automatically generates the application layer code based on the engine API</li></ul>  |                                       |                                   |
| <b>Teaching Assistant</b>   | <b>UT-Austin</b>                      | <b>August 2017 - May 2019</b>     |
| <ul style="list-style-type: none"><li>• Teaching Assistant in Database Systems (Spring 2019), Data Engineering (Fall 2018), Quantitative Methods in Neuroscience (Spring 2018), Differential Calculus (Fall 2017)</li></ul>   |                                       |                                   |

## HONORS AND AWARDS

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- 2017 IBM Appreciation program for the Practice: Dare to create original ideas, IBM
- 2016 IBM Manager’s Choice Award - Put the Client First, IBM
- 2018 Best Internship Project Award (Software Engineering), Schlumberger
- 2014 Graduation with Distinction, University of Wisconsin
- 2013 Honors Summer Sophomore Research Apprenticeship, University of Wisconsin
- 2012 Meek Bishop Scholarship in Economics, University of Wisconsin
- 2010-2012 Dean’s List, University of Wisconsin

## SERVICE AND SOCIETIES

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

## SPECIALIZED SKILLS

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- **Languages:** C++, C, Python, Go, Rust, Shell, SQL, Java, Lisp, MATLAB
- **Software:** CMake, Autotools, QEMU, Docker, Tensorflow, Keras, Git, ClearCase, Hive, Impala, Hadoop
- **Graduate Coursework:** Machine Learning, Structured Models for NLP, Human Computation & Crowdsourcing, Natural Language Processing, Semantics, Distributed Systems, Advanced Operating Systems, Data Centers, Algorithms, Automated Logic Reasoning,

## PAPERS

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- Jialin Wu, **Zeyuan Hu**, Raymond J. Mooney. “Jointly Generating Captions to Aid Visual Question Answering”. (ACL 2019 *Oral*)
- Jialin Wu, **Zeyuan Hu**, Raymond J. Mooney. “Joint Image Captioning and Question Answering” In *VQA Challenge and Visual Dialog Workshop at the 31st IEEE Conference on Computer Vision and Pattern Recognition* (CVPR 2018)
- **Zeyuan Hu** and Julia Strout. Exploring Stereotypes and Biased Data with the Crowd. arXiv preprint arXiv:1801.03261 (2018)

## SELECTED PROJECTS & RESEARCH EXPERIENCE

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- **RustFS** (2018 - 2019). Building a user-space file system that leverages NVMe SSD. [Rust](#), [SPDK](#)
- **Strata with Lease** (2018). Extended Strata file system with Lease mechanism to support concurrent file access across processes. [C](#)
- **HyperPebblesDB** (2018). Constructed a key-value store that is part of LevelDB family with focus on reducing write amplification. [C++](#), [CMake](#), [Autotools](#)
- **Distributed Key-Value Store** (2018). Built a distributed key-value store with [Python](#) that uses *eventually consistency* model with two session guarantees: *Read Your Writes* and *Monotonic Reads*.
- **SGX Benchmark** (2018). Used a cloud service benchmark (*CloudSuite*) to measure the performance penalty brought by SGX on the IPC between a web server (Nginx) and a PHP application in a local environment
- **Benchmark Journaling Write Amplification** (2018). Measured journaling impact on the write amplification of various file systems using customized [filebench](#), [blktrace](#), [iostat](#), and [strace](#)
- **Benchmark Write Amplification on Fragmented File Systems** (2018). Measured the write amplification of workloads from [filebench](#) and Git workload from *BetrFS* on fragmented (i.e., *aged*) file systems, which are created from file system aging tool (e.g., *Geriatric*)