Jieru Hu

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Education

University of Wisconsin Madison — **Madison, WI**

Bachelor of Engineering - Mechanical Engineering (Graduated with Honor) — *Aug 2013 – May 2018*
Bachelor of Science - Computer Science — *GPA: 3.85/4.00*
Bachelor of Science - Mathematics — *Dean list every semester*

CourseWork

Data Structure, Machine Organization & Programming, Numerical Methods, Probability Theory, Algorithms Linear Programming, Operating System, Artificial Intelligence, Computational Geometry, Computer Networks Numerical Analysis, High Performance Computing, Data Science, Machine Learning & Deep Learning (Coursera)

Experience

- **Undergraduate Research Assistant** — Madison, WI
  Wisconsin Human-Computer Interaction Laboratory — *September 2017 – June 2018*
  - *Implemented the trajectory motion planning for 6-DOF Kinova MICO arm with MoveIt framework*
  - *Developed python scripts in ROS to execute various industrial manufacturing tasks with MICO arm*
  - *Designed and built the communication interface between NodeJS UI server and Python Http server*
- **Software Engineering Internship** — Seattle, WA
  Amazon — *June 2017 - August 2017*
  - *Designed and implemented Screenshot Social Sharing feature into Kindle iOS App production in Objective-C*
  - *Built Java Coral service APIs to store Encoded Voice data into AWS S3 bucket within Guice framework*
  - *Developed the voice annotation feature in Kindle iOS notebook with an End-To-End model to synchronize client voice data across multiple devices*
- **Student Software Engineer** — Madison, WI
  Morgridge Institute for Research - Software Assurance Marketplace(SWAMP) — *January 2017 – May 2018*
  - *Enriched Perl and SQL scripts to display complete code analysis details on the Result Viewer Page*
  - *Developed a low memory-consuming backend service in C to parse code assessment result from XML into JSON*
  - *Upgraded and documented the SWAMP Perl runtime version from 5.18.1 to 5.26.1 on CentOS*
  - *Implemented a trigger in PHP server to launch automatic assessment of new code by GitHub Webhook event*
  - *Organized and stored SWAMP assessment result data into MongoDB*
- **Undergraduate Research Assistant** — Madison, WI
  Engine Research Center — *March 2018 – May 2018*
  - *Parallelized engine simulation code in python with different input temperature and pressure combinations*
  - *Prepared HTCondor job submit scripts and managed engine simulation jobs in HTCondor Cluster*
- **Advanced Engineering Co-op** — Fond du Lac, WI
  Mercury Marine — *May 2016 – December 2016*
  - *Installed and tested the Person Detection module on NVIDIA Jetson TK1 with Linux Bash Scripts*
  - *Utilized Open CV libraries in Python to calibrate fisheye camera and dewarp the live video stream*
  - *Integrated self-wrote robotic description scripts and bash scripts with open source ROS packages to create a boat docking simulation which is able to perform 2D-SLAM tasks visualized by GAZEBO*

Projects

- **DataScience on Used Car**: Crawl and clean data from Cars.com, followed by entity-matching and query analysis
- **Texture Synthesis on GPU**: Parallel Implementation of Texture Synthesis on CUDA architecture
- **Name Extraction from IMDB Comments**: Learning-based information extractor implemented with cross-validation on five machine learning methods, which extracts person names from natural text
- **Breast Cancer Diagnosis**: Use quadratic programming methods to calculate SVM based on clinical datasets and predict malignancy in diagnostic procedure
- **Computational Geometry in Python**: Constructed and maintained Delaunay triangulation and Voronoi diagram for arbitrary set of points in the plane with a self-designed data structure capable of answering geometric queries

Skills

- **Languages**: Java, Python, C, C++, Obj-C, MATLAB, Perl, JavaScript, SQL, PHP, Bash, R, HTML, CSS, XML, JSON, Latex
- **Technologies**: CUDA, OpenMP, MPI, ROS, Xcode, iOS-SDK, OpenCV, MySQL, MongoDB, MariaDB, Git, Tensor Flow, scikit-learn, Pandas, Guice, ReactJs, Laveral