Sicong Huang

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Data-driven and principle-driven AI for healthcare professional with **4+ years of research experience** and **1 year of industrial experience** developing machine learning models and agile software on multiple funded research, specialized in time-series researches on machine learning for clinical and remote health applications, with a primary focus on enhancing remote-sensing data quality, accurately monitoring cardiovascular diseases remotely, and tackling data heterogeneity in clinical settings. I'm **US permanent resident** (Green Carder Holder) and do not need future Visa sponsorship.

EDUCATION

Texas A&M University, College Station, TX   May 2025 (anticipated)
Doctor of Philosophy (PhD) in **Computer Science**   GPA: 3.82/4.0

Texas A&M University, College Station, TX   May 2021
Bachelor of Science (BS) in **Computer Science**   GPA: 3.72/4.0
Minor in **Cybersecurity**   **Magna Cum Laude**

WORK EXPERIENCE

Nuvenu LLC (technology startup), Fort Worth, TX
Database Administrator and Software Engineer   May 2020 – May 2021
- Architected and Implemented a cloud graph database with Cypher to handle relationships and interactions among business owners, customers, and posts & reviews
- Wrote RESTful APIs using .NET Core to enable the website to perform CRUD via HTTP requests to the database with MVC pattern
- Managed the project Agile Scrum, performed version control with DevOps, and deployed the service on Azure

Texas A&M University, College Station, TX
Undergraduate Peer Teacher at Department of Computer Science & Engineering   August 2018 – May 2021
- Assisted teaching assistants in lab sessions and tutored students across all foundational undergraduate courses from 100 to 300 levels
- Conducted weekly review sessions on CSCE 222, 312, and 313; held office hours both in-person and online

Student Technician at Student Computing Center and Open Access Lab   August 2017 – May 2018
- Troubleshooted technical problems related Windows and MacOS machines
- Answered questions on both technical and miscellaneous questions in-person and via-phone

RESEARCH EXPERIENCE

Texas A&M University, College Station, TX
Graduate Research Assistant at the *STMI lab*, advised by *Dr. Bobak J. Mortazavi*   June 2021 – Present
- Converted pulsatile biomarkers into health parameters with machine learning (ML) end-to-end pipeline that includes signal processing, transformation, and data-driven estimation with Python
- Analyzed and trained an accurate and automated diet monitoring ML model with R and Python
- Designed clinical IRB protocols for a National Institutes of Health (NIH) grants with hospital collaborators and analyzed collected data for automated cardiac rehabilitation monitoring
- Advised 4 undergraduate and graduate researchers, managed 3 Linux workstations, and maintained lab website with Jekyll
- Developed software tools and libraries in Python to facilitate data analysis, visualization, and modeling
- Published and submitted 2 conference papers and 1 journal on peer-reviewed venues

Undergraduate Research Assistant at the *STMI lab*, advised by *Dr. Bobak J. Mortazavi*   August 2020 – May, 2021
- Analyzed sentiments over 250K tweets with Spark and predict their political preference
- Implemented and tuned over 1000 NLP features including Part of Speech (POS), emoticon & emoji, lemmatization, and Hashtag labeling, etc.
- Validated the framework against various Baselines (LSTM, XGBoost, SVM, etc.) with cross validation

*: equal contribution

Undergraduate Research Scholar at [Innovation Information lab](#), advised by Dr. Anxiao Jiang   May 2019 – May, 2020
- Classified the action of "looking down at phone" with an accuracy of 86.47% via 2D body landmarks extracted from videos and images in a supervised training
- Published undergraduate thesis and archived in OAKTrust

Member of Team 12th Unmanned, SAE/GM *AutoDrive Challenge*   August 2017 – May 2019
- Synchronized GPS and LiDAR signals to CAN bus with automatic script using C and bash on Linux workstation
- Designed and implemented user interface (UI) with Qt and JavaScript

PUBLICATIONS

- **Sicong Huang**, Roozbeh Jafari, Bobak Mortazavi, "ArterialNet: Arterial Blood Pressure Reconstruction", IEEE-EMBS International Conference on Biomedical and Health Informatics (BHI) 2023 (Accepted with oral: **12%**)
- Lida Zhang, **Sicong Huang**, Anurag Das, Edmund Do, Namino Glantz, Wendy Bevier, Rony Santiago, David Kerr, Ricardo Gutierrez-Osuna, and Bobak J. Mortazavi, "Joint Embedding of Food Photographs and Blood Glucose for Improved Calorie Estimation", IEEE-EMBS International Conference on Biomedical and Health Informatics (BHI) (Acceptance Rate: **12%**)
- **Sicong Huang**, Roozbeh Jafari, Bobak Mortazavi, "Pulse2AI: An Adaptive Framework to Standardize and Process Pulsatile Wearable Sensor Data for Clinical Applications", Open Journal of Engineering in Medicine and Biology (OJEMB) 2023 (accepted on 03/03/2024)
- Zhale Nowroozilarki*, **Sicong Huang***, Rohan Khera, Bobak Mortazavi, "Non-invasive Potassium Estimation Using Multi-lead ECG data via Semi-supervised Contrastive Learning with an Adaptive Loss", Conference on Health, Inference, and Learning (CHIL) 2024 (under review)

WORKSHOPS & SERVICES

IEEE-EMBS International Conference on Biomedical and Health Informatics (BHI 2023)   October 2023
- Workshop on Unraveling Challenges in Time Series Analysis with Open Source Tools for Digital Health Applications
- Judge of BHI 2023 Data Challenge Competition (Phase 2)

Research Experience for Undergraduates (REU) at Texas A&M University   July 2023
- Towards automatic diet monitoring, Tutorial on Macronutrient Estimation with Machine Learning

AWARDS

IEEE-EMBS International Conference on Body Sensor Networks (IEEE BSN 2023), Boston, MA   October 2023
- Student Travel Award

BHI 2023, Pittsburgh, PA   October 2023
- Student Travel Award

SAE/GM AutoDrive Challenge Year 2 Competition, Ann Arbor, MI   May 2019
- Third Place in Overall Competition

SAE/GM AutoDrive Challenge Year 1 Competition, Yuma, AZ   May 2018
- **First Place** in Object Detection & Avoidance, **Second Place** in Overall Competition

SKILLS

Languages: **Python**, **MATLAB**, LaTeX, R, C++, Java, C#, JavaScript, SQL, Cypher, JMP

Tools/Packages: **Pytorch**, **Sklearn**, **Weights & Bias**, React, TF/Keras, Spark, matplotlib, seaborn

Technologies/Frameworks: **Linux**, .NET, CI/CD, Scrum/Agile, AWS, Azure

*: equal contribution