Justin Wilson

Address: Ashburn, VA 20148

Email: jawhster@gmail.com Website: https://www.cs.unc.edu/~wilson/ Phone: +1 (609) 937-9371

Educational Background:

- University of North Carolina, Chapel Hill Aug. 2016 – Dec. 2020
  - Ph.D. and Master's degrees of Computer Science, 12 / 15 High Pass, Total Credits 46
  - Thesis: Multimodal Learning for Audio and Visual Processing (URL)
- Lehigh University Aug. 2003 – May 2007
  - Bachelor's of Science degree in Integrated Business and Engineering honors program
  - Overall GPA 3.94 / 4.0, Total Credits 148, summa cum laude
- Johns Hopkins University Aug. 2002 – May 2003
  - Math High School Scholar, Overall GPA: 3.5 / 4.0, Total Credits 8

AWS Certifications & Publications:

- AWS Certified Data Analytics – Specialty, October 2022, Badge URL
- AWS Certified Solutions Architect Associate, October 2022, Badge URL
- **J. Wilson**, N. Rewkowski, M. C. Lin. *Audio-Visual Depth and Material Estimation for Robot Navigation*. IROS 2022. Project URL
- **J. Wilson**, M. Adelfio, V. Hare. *Extending a Big Data Platform for Transportation to Space*.
- **J. Wilson**, D. Stauffer, T. Yu. *Analysis of Deviations During Simultaneous Approaches to Parallel Runways*. MITRE Technical Report. 2021
- **J. Wilson** and M. C. Lin. *AVOT: Audio-Visual Object Tracking of Multiple Objects for Robotics*. ICRA 2020. Project URL
- **J. Wilson**, A. Sterling, M. C. Lin. *Analyzing Liquid Pouring Sequences via Audio-Visual Neural Networks*. IROS 2019. Project URL
- A. Sterling, **J. Wilson**, S. Lowe, M. C. Lin. *ISNN: Impact Sound Neural Network for Audio-Visual Object Classification*. ECCV 2018. Project URL
- **J. Wilson**, A. Sterling, N. Rewkowski, M. C. Lin. *Glass Half Full: Sound Synthesis for Fluid-Structure Coupling Using Added Mass Operator*. CGI 2017, The Visual Computer. Project URL

Work Experience:

- **Part-Time Adjunct Faculty, George Mason University**, Fairfax, VA Aug. 2023 – Present
  - Department of Computer Science teaching Computer Programming for Engineers
- **Multimodal Research Scientist, Leidos**, Reston, VA Feb. 2023 – Present
  - Multilingual & multimodal search, vector embeddings/databases, LangChain, & LLMs
- **Lead Data Scientist, The MITRE Corporation**, McLean, VA Jun. 2018 – Feb. 2023
  - Developed ETL and derived analytics for a data pipeline with petabyte archives from aviation, treasury, and space agencies using Java, Hadoop, HDFS, IntelliJ, Git, Jira
  - Performed big data analytics using Python, R, SQL, Spark, Hive, JupyterHub, JavaScript, HTML, CSS, D3.js, Linux, Mac OS, AWS, OpenShift, Docker
  - First authored space conference paper and safety analysis technical report

- **Graduate Research Assistant, UNC-CH**, Chapel Hill, NC Aug. 2016 – May 2018
    - Audio-visual research for the GAMMA and Graphics & Virtual Reality labs using C/C++, Python, Keras, Tensorflow, CUDA, GPU, Android Studio
    - Advisors: Prof. Ming C. Lin and Prof. Henry Fuchs
- **Business Analytics Manager, AstraZeneca**, Gaithersburg, MD Jun. 2011 – Jun. 2016
    - Led QlikView executive and brand dashboards for three Oncology drug launches
    - Programmed fuzzy matching in Excel VBA and iPad app for 200+ sales professionals
    - Roles: Sales Force Effectiveness, Data Management, Analytics, and Sales
- **Business Information Specialist, ZS Associates**, Princeton, NJ Sep. 2009 – May 2011
    - Global management consulting in sales & marketing, healthcare, and outsourcing
    - Managed size and structure projects for sales leadership that resulted in targeting, segmentation, and the addition of payer-specific and reimbursement field teams
- **Product Manager, Psyleron**, Princeton, NJ May 2007 – Aug. 2009
    - 1st employee at tech start-up founded out of the Princeton Engineering PEAR lab
    - Managed 8 products (3 product lines) and developed web-based subscription/e-commerce systems, modularized software, and MySQL database applications

Computer & Programming Skills:

- **Programming Languages**
    - Android, C/C++, C#, CSS, HTML, Java, JavaScript, Objective-C, PHP, Python
- **ML/AI and Analytics**
    - CUDA, GPU, Keras, NLTK, Scikit-Learn, Tensorflow, Tensorboard, Unity, Unreal
    - Access, D3.js, Excel, Matlab, Microsoft Office, R, Salesforce, SAS, SQL/MySQL
- **Big Data & Cloud**
    - AWS, Docker, EC2, Hadoop, IBM Cloud Pak, Linux, OpenShift, S3, Spark

Provisional Patents:

- **J. Wilson**, S. Wilson. *System and Method for Video Processing, Behavior Monitoring, Modeling, and Interaction*. 2021. URL
- **J. Wilson**, S. Wilson. *System & Method for Prescription Drug Authorization Information*. 2018. URL
- **J. Wilson**, S. Wilson, D. Schulz. *Assessments, Methods, and Systems of Learned Career Guidance*. 2016. URL
- **J. Wilson**, C. Rhee. *System and Method for Digital Advertising using Social Media*. 2013. URL

Graduate Courses:

- Fall 2016: UNC COMP 776 – Computer Vision in 3D World
- Fall 2016: UNC COMP 541 - Digital Logics and Computer Design
- Fall 2016: UNC COMP 768 - Physically-Based Modeling, Simulation, & Animation
- Spring 2017: UNC COMP 790 - Advanced Machine Learning
- Spring 2017: UNC COMP 520 – Compilers
- Spring 2017: UNC COMP 872 - Virtual Environments
- Fall 2017: UNC COMP 633 - Parallel Computing
- Fall 2017: UNC COMP 750 - Algorithm Analysis
- Spring 2018: UNC COMP 781 – Robotics
- Spring 2018: UNC COMP 790 - Advanced Topic in NLP: Conversational Models

References provided upon request