Uma Subbiah

Chicago, Illinois
LinkedIn: linkedin.com/in/uma-subbiah1 Github: github.com/uma-subbiah
Website: uma-subbiah.github.io Google Scholar: [link to profile]

Education

- **University of Oxford** Oxford, UK
  Master of Science in Computer Science, **Distinction (in both coursework and thesis)** *Oct 2020 – Sep 2021 | 1 year*
  Select Coursework: Machine Learning, Requirements, Computer Aided Formal Verification, Computers in Society
  Thesis: "Automated Classification of Cardiac Action Potential Phenotypes for Prediction of Drug-Induced Pro-Arrhythmic Risk". Research conducted with the Computational Cardiovascular Science group, Oxford.

- **Amrita Vishwa Vidyapeetham** Coimbatore, India
  Bachelor of Technology in Computer Science & Engineering *Jul 2016 – Jun 2020 | 4 years*
  GPA: 9.91/10, 1st Class, Distinction, Gold medalist for highest graduating GPA
  Select Coursework: Software engineering & Project Management, Machine Learning, Databases, Cloud Computing

Experience

- **McDonald's Corporation** **Chicago, Illinois | *Sept 2022 – Present***
  Software Engineer II
  (Oct 1st 2023 – Present)
  - **Pioneering Software Launches** – Spearheading software feature development, defect resolution, and deployments, ensuring seamless digital ordering launches in major and lite markets, while enhancing app performance and reliability.
  - **Driving Global Expansion & Stability** – Delivered software to handle 30+ restaurant parameters, aligning digital and store calculations. Owned stakeholder communication, revamping 3rd-party order integration with our software, tax implementations digital order history unification, and built a processor for real-time kitchen order status tracking.
  - **Chosen for High-Impact Initiatives** – Representing the ordering capability on a lead market adoption squad to accelerate software time-to-market & app launches in 4 major markets (in addition to the US) & ensure real-time production stability.

  Software Engineer I
  (Sept 12th 2022 – Sept 30th 2023)
  - **Core Backend Engineer** – Developed and maintained RESTful API software for digital order validation, totalization, and fulfillment in the McDonald's app across global markets. Implemented backend fixes for 10+ promotions across multiple countries and added software implementation for 10+ offer types, optimizing for seamless upgrades.
  - **Enhancing Software Automation & Compliance** – Built 20+ Postman collections for automated software verification, improved test coverage across 5+ services, adapted existing code to account for tax regulations in various global markets.

- ***Software Engineer,*** **Matician, Inc.** **Mountain View, California | *Nov 2021 – Sept 2022 | 10 months***
  - Engineered computer vision & deep learning solutions, as an integral member of the Perception Software Team.
  - Automated the calibration of robots, reducing the necessary human-involvement from >1.5 hours to 5 minutes per robot.
  - Achieved < 4cm translational & negligible rotational error with an autonomous docking algorithm I designed.
  - Integrated stereo camera rectification tests, reducing camera calibration test time from 15-20 mins to 2-3 mins per robot.

- ***Graduate Research/Thesis Work,*** **University of Oxford** **Oxford, UK | *Apr 2021 – Sept 2021 | 5 months***
  - Worked in the Computational Cardiovascular Science group to engineer software that enhance cardiac drug safety.
  - My contribution was presented at the 2021 Safety Pharmacology Society's Annual Meeting the 2021 Cardiac Physiome.
  - Awarded the 2021 SPS Student Award & won the 1st place in SPS Junior Investigator Poster Contest for achieving 99.87% accuracy and 98.46% accuracy for predictions on the ORd and ToR-ORd models respectively.
- ***Lead*, Developer Student Club by Google Developers** **Coimbatore, India | *Jan 2019 – Jul 2020 | 1 year 6 months***
  - Conducted over 7 workshops & hackathons; trained over 300 students on campus; increased student participation to 3-digit registrations. Invited (and sponsored) to the India DSC Summit by Google Developers at Goa, India
- ***Software Intern,*** **IIT Madras Research Park** **Chennai, India | *May 2019 – Jul 2019 | 2 months***
  - Developed a software prototype for predicting the presence of chronic kidney disease inpatients, using case-based reasoning and Java UI components.; my work was accepted for testing and verification, after the completion of my internship.
- ***Software Research Intern*, Leeds Beckett University** **Leeds, UK | *Feb 2018 – Jul 2018 | 5 months***
  - Devised a cloud-based machine learning solution to predict software bugs & reduce loss incurred by software companies.
  - Achieved an F1 score = 91.5% ML cloud-based service, presented at a conference in Portugal, published as a book chapter.
- ***Student Researcher*, Smart Spaces Lab** **Coimbatore, India | *Sep 2017 – Jun 2020 | 2 years 9 months***
  - Worked extensively on tasks involving object detection for intelligent living spaces.
- ***Software Intern*, Seyyone Software Technologies** **Coimbatore, India | *Nov 2017 – Jan 2018 | 2 months***
  - Implemented a retrieval-based service chatbot interactive software with machine & deep learning.

Awards, Honors & Certifications

- Earned Google Cloud's Cloud Digital Leader Certification *June 2024*
- Selected to represent the McDonald's Software Engineering Team at the Grace Hopper Celebration *Sept 2023*
- 1st prize for Poster (entry 8 under Publications), Safety Pharmacology Society's Junior Investigator Poster Contest *Oct 2021*
- Student Award for abstract (entry 8, Publications), Safety Pharmacology Society's 2021 Annual Meeting *Oct 2021*
- Google Developers Certified TensorFlow Developer & Honorary Member of the TensorFlow Certificate Network *Jul 2020*
- Graduated with the gold medal and highest GPA among 380 students in my undergrad class. *Jun 2020*

Select Projects – *Please see the project section of my website (uma-subbiah.github.io/) for a complete list*

- **Graduate Thesis Project**
  - Worked in the Computational Cardiovascular Science group at Oxford to engineer an automated software-based approach to classifying drug-induced heart abnormalities. Research presented at the Safety Pharmacology Society Conference (Oct 2021) & Cardiac Physiome Meeting – (Nov 2021). Please see entries 8, 9 under Publications.
- **Undergraduate Final Project**:
  - Developed deep learning architecture and software solutions to enhance image analysis with applications in wildlife detection and image-based cancer detection – entries 2, 3 under Publications.
- **IBM's Data Science Professional Certificate** - Capstone Project:
  - Identified 3 most ideal locations to establish a hospital in London, using data collection, analytics, and machine learning.
- **Fuzzy Logic based Heart Disease Predictor:**
  - Engineered a user-friendly fuzzy logic software system to predict heart disease w/ Python, scikit-fuzzy & matplotlib.

Programming Skills

- **Technologies**: RESTful APIs, Machine & Deep learning, Computer Vision, TensorFlow, PyTorch, Keras, Pandas, NumPy, Data Analysis and Visualization, SQL, Linux, Shell scripting, Git & GitHub, .NET, Postman, Terraform
- **Languages**: Java, Python, C#, C, C++, JavaScript

Publications – My research publications include 1 book chapter, 6 conference proceedings and 2 posters.

- *Please see my Google Scholar profile here: [link to profile] for a complete list. (Also tabulated below)*

(i) Book Chapter			***Research Institution:***
1.	Jan 2020, Springer	***Subbiah, U.**, Ramachandran, M.&Mahmood, Z., 2020.* Software Engg. Framework for Software Defect Management Using Machine Learning Techniques with Azure. In Software Engg. in the Era of Cloud Computing (pp. 155-183). Springer	*Leeds Beckett University*
(ii) Conference Proceedings			
2.	*Sep 2020 IEEE*	***Subbiah, U.**, Kumar, R. V., Panicker, S. A., Bhalaje, R. A., & Padmavathi, S. (2020, July).* An Enhanced Deep Learning Architecture for the Classification of Cancerous Lymph Node Images. In 2020 2nd ICIRCA (pp. 381-386). IEEE.	*Amrita Vishwa Vidyapeetham*
3.	*Jun 2020 IEEE*	***Subbiah, U.** and Padmavathi, S., 2020, February.* Analysis of Deep Learning Architecture for Non-Uniformly Illuminated Images. In 2020 International Conference on Inventive Computation Technologies (ICICT) (pp. 38-43). IEEE.	*Amrita Vishwa Vidyapeetham*
4.	*May 2020 Springer*	***Subbiah, U.** and Jeyakumar, G., 2020.* Soft Computing Approach to Determine Students' Level of Comprehension Using a Mamdani Fuzzy System. In Intelligent Systems, Technologies and Applications (pp. 103-115). Springer, Singapore.	*Amrita Vishwa Vidyapeetham*
5.	Jan 2019 *Scitepress*	***Subbiah, U.**, Ramachandran, M. and Mahmood, Z.*, 2019, January. Software Engg. approach to bug prediction models using machine learning as a service (MLaaS), in Proceedings of the 13th ICSOFT 2018 (pp. 879-887).	*Leeds Beckett University*
6.	*Oct 2020, IEEE*	***Subbiah, U.**, D. Kavin Kumar, Thangavel S. K, P. Latha:* An Extensive Study and Comparison of the Various Approaches to Object Detection using Deep Learning: Presented: Intl. Conf on Smart Systems and Inventive Technology, IEEE	*Amrita Vishwa Vidyapeetham*
7.	*Jun 2021, Springer*	*Sundaram, A., Ravishankar, H.,* ***Subbiah, U.**, Kadiresan, N., & Karthika, R.* (2021). Case-Based Expert System for Smart Air Conditioner with Adaptive Thermoregulatory Comfort. In Intelligent Systems, Technologies and Applications (pp. 403-418). Springer, Singapore.	*Amrita Vishwa Vidyapeetham*
(iii) Poster Presentations			
8.	*Oct 2021*	***Subbiah, U.,** Rodriguez, B., Passini, E.,* A Machine Learning Model to Improve Identification of Drug-induced Abnormalities in Cardiac Repolarisation. Poster at: *Safety Pharmacology Society Annual Meeting*, 2021	*University of Oxford*
9.	*Nov 2021*	***Subbiah, U.,** Rodriguez, B., Passini, E.,* A Presentation on Machine Learning to Improve Identification of Drug-induced Abnormalities in Cardiac Repolarisation. Poster at: *Cardiac Physiome*, 2021.	*University of Oxford*