

Akathian SANTHAKUMAR

Candidate, MSc. Computer Science | HBSc. Computer Science and Neuroscience

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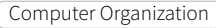



































KEY COMPETENCIES

Languages	Python, TypeScript, JavaScript, Java, Matlab, R, C, Shell Scripting
Artificial Intelligence	ML/DL Frameworks (PyTorch, Tensorflow, Keras, NumPy, Scikit-learn, Gensim), MLOps (Docker, docker-compose, AWS Sagemaker), ML/DL Algorithms
Developing Experience	Backend (Node.js, Django, Flask), DB (MySQL, NoSQL), Frontend (Angular, React.js, Django) Infra (Docker, Apache Airflow, Redis, SonarQube, Kubernetes, Prometheus, Grafana)

EDUCATION

2022 - Present	MSc, Computer Science, Toronto Metropolitan University. Research Focus : Deep learning solutions for subdural hematoma risk assessment and classification
2017 - 2022	HBSc, Double Major in Neuroscience, Computer Science, University of Toronto. Honors Thesis : A neural network model of visual word recognition

EXPERIENCE

September 2024 Present	Graduate Teaching Assistant, TORONTO METROPOLITAN UNIVERSITY, Toronto, ON CPS 118, CPS 213, CPS 521   
March 2022 May 2023	Machine Learning Engineer, MARZ VFX, Toronto, ON Engineering ML apps, data pipelines, ML models and supporting ML infrastructure for VFX tasks <ul style="list-style-type: none">➤ Spearheaded pivotal discussions in system design meetings for LipDub AI and Vanity AI, contributing to the development of cutting-edge AI infrastructure that facilitated Hollywood-grade automated lip-syncing and accelerated, high-quality VFX enhancements, respectively.➤ Sped up a data pipeline by over 300x by optimizing db calls, model compilation (ONNX runtime) and general code quality➤ Built an end-to-end ML webapp for eye bag, acne and deaging edits that meet Hollywood standards with 5 team members, saving artists over 90% of their time.         
September 2021 April 2022	Deep Learning Research Programmer, UNIVERSITY OF TORONTO DEPT. OF PSYCHOLOGY, Toronto, ON Developed neural network models of how humans produce, comprehend, and understand language <ul style="list-style-type: none">➤ Researched and coded the python (PYLens) translation of the CLens neural network simulator implementation of Simple Recurrent Backpropagation Through Time (SRBPTT)➤ Analyzed and interpreted results of neurological computational models of language processing to evaluate performance and how well the model has simulated neurological systems    
September 2021 December 2021	Machine Learning Engineer, 16 BIT, Toronto, ON Engineered neural networks to infer BMD from x-ray images and survival predictions in COVID-19 patients <ul style="list-style-type: none">➤ Researched and implemented independantly DeepHit, COX, XGBoost, and DeepSurvivalMachine algorithms to COVID-19 patient data to predict clinical outcomes➤ Built a pipeline to run multiple experiments to obtain the model that could predict risk score the best          
January 2021 August 2021	Software Developer, BioRENDER, Toronto, ON Focused on features, APIs and the database before working on user recommendations, A/B tests and data. <ul style="list-style-type: none">➤ Coded and A/B tested a scoring function to match over 6k users to field specific templates to investigate whether recommending templates to a user would increase their usage➤ Engineered, trained and tested document classifying and clustering algorithms to recommend templates most similar to the user's illustrations➤ Implemented the Flagsmith A/B testing platform, enabling over 25 developers and project managers to test any number of features risk-free, and investigate whether the feature improves metrics           
September 2019 April 2020	Innovation Engineer (R&D Application Developer), CIBC, Toronto, ON Prototyped a digital assistant by researching and implementing frontend, backend & infrastructure tech. <ul style="list-style-type: none">➤ Developed a queueing system to set event processing order, capable of efficiently organizing events➤ Built a neural network predicting user's overall sentiment based on their gestures, facial expression and what they say so that the assistant can change how she answers the user's questions 