

# Vignesh Edithal

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## WORK EXPERIENCE

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**Advanced Micro Devices (AMD)**  
**Senior Software Engineer**

**May 2023 - present**  
**Markham, Ontario**

- Finetuned CLIP and Auto Encoder models to detect interesting events in FPS gameplay with > 90% accuracy
- Trained EfficientNet models to detect visual quality artifacts in video games with > 95% correlation
- Designed efficient data collection methodology to develop > 50 GB in-house video dataset in a month
- Optimized state-of-the-art Transformer and CNN models for deployment using ONNX framework

**D. E. Shaw**  
**Senior Member Technical**

**July 2018 - July 2022**  
**Hyderabad, India**

- Enabled firm-wide hierarchical permission management feature using Python and SQL backend
- Automated third party file transfers for HR using Python/Bash scripting leading to 10% ticket reduction
- Provided engineering support for production Linux cluster to SysAdmin team to reduce SRE escalations

## PROJECT WORK

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**Brain Tumor MRI synthesis using aggregation of GANs** [[GitHub](#)] [[Report](#)] **University of Toronto**

- Implemented and trained DCGAN and WGAN models from scratch with tuned hyper-parameters
- Pre-processed data using up/down-sampling and used style transfer for post processing
- Obtained PSNR and SSIM scores comparable to relevant literature
- Showcase research in poster presentation with industry/faculty and submitted conference format report

**Insurance Premium Modelling** [[GitHub](#)] [[Report](#)]

**University of Toronto**

- Grid search tuned XGBoost regression to independently model frequency and severity of insurance policy
- Geographical clustering using DBSCAN. Data Imputation using Gaussian Mixture model. Frequency encoding
- Model validation using synthetic data from SDV library Copula. Tune profit loading in a competitive setting

## PUBLICATION

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**Novelty Goes Deep. A Deep Neural Solution To Document Level Novelty Detection.** (Ghosal, Edithal et. al., COLING 2018). ([aclanthology.org/C18-1237](https://aclanthology.org/C18-1237))

**Is your document novel? Let attention guide you. An attention-based model for document-level novelty detection.** (Ghosal, Edithal et. al., Natural Language Engineering 2022). ([Journal article](#))

## EDUCATION

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**University of Toronto**

**September 2022 - December 2023**

**MSc in Applied Computing:** Deep Learning, Computer Vision, Data Science **GPA: 4.0/4.0**

**IIT Madras**

**December 2021 - August 2022**

**Diploma in Data Science:** Statistics, Machine Learning, Business Analytics **GPA: 9.3/10**

**IIT Patna**

**September 2014 - May 2018**

**BTech in Computer Science:** Algorithms, Databases, Operating Systems **GPA: 8.9/10**

## TECHNICAL STRENGTHS

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<b>Scripting</b>	Bash, PowerShell, Python
<b>Deep learning</b>	Transformers, PyTorch, Keras, Hugging Face
<b>Computer Vision</b>	OpenCV, TorchVision, Decord, Scikit-image
<b>Data Science</b>	Pandas, Numpy, Matplotlib, Scikit-learn, SQL Alchemy