Arjon Das

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TECHNICAL SKILLS

Programming Languages: Python, C++, JavaScript, Swift
Deep Learning Frameworks: TensorFlow, Keras, PyTorch
Full Stack Development: MongoDB, Express.js, React.js, Node.js (MERN stack)

EXPERIENCES

RNA Lab, University of Nebraska, Omaha, NE – Graduate Research Assistant   *Dec 2020 – Present*
- Expanded the RNA lab's ongoing Deep Learning-based Image Watermarking project to support audio as the watermark and simultaneously increased the embedding capacity for the watermarking information.
- Developed a custom training module that bypasses the Google Cloud Storage access to train deep learning models on TPUs with private datasets. It **saved up computation costs** for the lab by enabling team members to leverage powerful Kaggle & Colab TPU resources to quickly experiment with architectures on big datasets (> 16GB) for free.

Bibidho, Chittagong, Bangladesh – Full Stack Software Engineer   *Dec 2018 – June 2020*
- Developed a minimal input OTP-based signup system (only phone number on signup and home address at checkout) that **minimized the customers' effort** to reach the product checkout page.
- Implemented a role-based access control system with Node.js to restrict employee administrative access. Also, implemented word processing with Draft.js to facilitate customizable no-code product description formatting and a real-time customer support system with Socket.IO.
- Created Content Management System for the Marketing team, enabling them to update the products, landing page layouts quickly and effortlessly.

PAPER PUBLICATION

- **Arjon Das,** Xin Zhong. A Deep Learning–based Audio-in-Image Watermarking Scheme, *IEEE Conference on Visual Communication and Image Processing (VCIP). 2021* (Accepted & Forthcoming) – *Arxiv*

RELEVANT PROJECTS

Deep Learning-based Image Watermarking, NSF-Funded Project   *Apr 2021*
- Developed the first of its kind deep learning model using **TensorFlow** that learns to hide a 32kB audio clip inside a 49kB image and successfully retrieve it.
- Designed a Similarity detection network to distinguish between original and extracted watermark audio clips.

Stock-Tweet Listener, Personal Project – *Project Website*   *Sep 2020*
- Developed a CRUD Progressive Web App with the MERN stack, utilizing Stocktwits API to monitor stock stats based on the most tweet count and utilized Recharts.js to produce interactive Bar and Line charts to visualize them.
- Deployed the app in Heroku and set up environment variables to configure the app for production and development.

IoT Based Smart Food Monitoring System, Undergraduate Final Project   *Nov 2018*
- Prototyped a sensor unit with Raspberry Pi and Python that takes pictures inside refrigerator, and reads temperature, humidity and food availability and transmits sensor readings in real-time using Socket.IO.
- Developed a CRUD **Node.js** backend with **MongoDB** to register and monitor incoming data from the sensor unit.
- Developed an iOS app in **Swift** that allows users to pair multiple sensor units together and connect with them, get notifications, view sensor readings and visualizations, and take a glance inside the refrigerator remotely.

Direct 2D App, Personal Indie Game Dev Project   *Aug 2017*
- Developed a SpriteKit based iOS game with tap controls.
- Polished the UI and game logic for zero memory leaks and optimized the game to run smoothly at 60 FPS.
- **Released the production ready game** at Apple App Store and organically received 2.6k downloads.

EDUCATION

University of Nebraska, Omaha, Nebraska   *Aug 2021 – Present*
Master of Science in Computer Science

Chittagong University of Engineering and Technology, Chittagong, Bangladesh   *Mar 2014 – Dec 2018*
Bachelor of Science in Computer Science and Engineering