BENEDICT FLORANCE A

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EDUCATION

National Institute of Technology, Tiruchirappalli, India	July 2016 - Present
B.Tech (Hons.) in Computer Science and Engineering	CGPA: **9.41**/10
Minor in Economics	

Montfort School, Trichy	May 2016
Class XII *All India Senior School Certificate Examination 2016*	**96.8%**
Class X *All India Secondary School Examination 2014*	CGPA: **10**/10

AREAS OF INTEREST

Machine Learning, Deep Learning and Computer Vision

SCHOLASTIC ACHIEVEMENTS

- Awarded the prestigious **Indian Academy of Sciences' Summer Research Fellowship** to work under Prof. Dr. C. V. Jawahar in the field of computer vision and deep learning at IIIT - Hyderabad.
- Awarded the **Google India Challenge Scholarship** for the Mobile Web Specialist track.
- Currently **ranked 3rd** among the **102 students** in the CSE Department, NIT Trichy.
- Secured **first place** in the district of Trichy in the CBSE Class XII AISSCE 2016.
- Awarded the **Best Outgoing Student** of Montfort School, Trichy for the academic year 2015-16.
- Among the **top 1%** of the students who wrote the National Standard Exam in Physics and Chemistry.
- Selected for the **Inspire Science Internship** organized by the Dept. of Science & Technology, Delhi.

RESEARCH EXPERIENCE AND PROJECTS

Indian Flora Project: Social Image Data Based Plant Species Identification and Disease Detection using Deep Learning	May 2018 - July 2018
Guide: Prof. C. V. Jawahar	*IIIT, Hyderabad*

- Employed Convolutional Neural Network model (ResNet18) by iterating through several different models trained from-the-scratch, fine-tuned on ImageNet, PlantCLEF Encyclopedia of Life, PlantCLEF noisy web datasets on a manually collected, robust dataset of 100 Indian plant species. (using PyTorch)
- Experimental observations show efficient computation time and high top-5 precision of 99.85% compared to the low performance of state-of-the-art approaches that focus on hand-engineered features. (<u>Report Link</u>)
- Deployed a collaborative web-portal using Angular and NodeJS and an Android mobile application where users can add new observations to the catalogue and query for species identification.
- The research was supported by the *Indian Academy of Sciences' Summer Research Fellowship.*

MDecoder	Feb 2018 - April 2018
Pragyan, techno-managerial festival of NIT Trichy	*Spider, NIT Trichy*

- Developed the three-day online mathematical challenge MDecoder, where contestants answer mathematical questions of different difficulty levels from various disciplines of mathematics like algebra, applied maths.
- Built the web application using ReactJS library for the user interface, PHP framework Laravel for the backend service and hosted in Docker-based environment. Implemented efficient, foolproof algorithms for authentication, time-based scoring, question generation and submission validation. The contest witnessed over 500+ contestants and 25,000+ submissions.

Web Development Intern
Indian Railways

Dec 2017 - Feb 2018
Integral Coach Factory, Chennai

· Developed the backend service for digitizing the records of inventory management, production planning and status updates of the coaches and rakes under the Digital India initiative.
· Wrote API's in Laravel framework to handle authorization across Web and Android clients.
· The code was reviewed and pushed to production. The Android application has been released on Google Play Store (Link) and is used by more than 500 employees of ICF, Chennai for internal purposes.

Smart Health Care System
Pragyan Hackathon

Oct 2017 - Dec 2017
Bangalore

· Implemented machine learning models to predict disease risks based on user symptoms and lifestyle inputs as a collaborative pipeline between doctors and patients. Used web-scraped data for training the model.
· Built a recommendation system for analyzing the abnormal parameters and recommending future course of action like medicines and wrote APIs for the Android application where the features were deployed.

RELEVANT COURSES

· **Computer Science** - Automata and Formal Languages, Basics of Programming, Computer Organization, Data Structures, Discrete Structures, Introduction to Algorithms, Operating Systems, Principles of Programming Languages, The Elements of Computing Systems.
· **Mathematics** - Higher Engineering Mathematics, Combinatorics and Graph Theory, Introduction to Probability Theory, Principles of Operations Research.
· **Others** - Data Communications and Networks, Digital Systems Design, Principle of Economics
· **Independent Coursework** - Machine Learning *(Stanford University on Coursera)*, Deep Learning Specialization *(deeplearning.ai on Coursera)*, Introduction to Computer Vision *(Georgia Tech on Udacity)*, Machine Learning with TensorFlow on Google Cloud Platform *(Google Cloud on Coursera)*, Convolutional Neural Networks for Visual Recognition *(Stanford University Online)*

TECHNICAL STRENGTHS

Programming Languages	C/C++, Python, JavaScript
Libraries	TensorFlow, Pytorch, NumPy, Scikit-Learn
Software & Tools	git, MATLAB, GNU Octave, LaTeX
Web Development	HTML, CSS, Angular, PHP, Laravel, Node.js, MySQL, MongoDB

POSITIONS OF RESPONSIBILITY AND EXTRACURRICULARS

· **Machine Learning Enthusiast and Web Developer**, *Spider, the Research and Development club of NIT Trichy*: Built the institute websites for mess allocation, hostel room allocation, technical festival contests and research projects involving machine learning and electronics. Involved in knowledge sharing sessions, hackathons, coding contests and open-source projects.
· **Instructor and Organizer**, *Technical Workshops*: Conducted introductory web development (Node.js, MongoDB), game development(HTML5 Canvas, JavaScript) and machine learning (Python) workshops to the institute freshmen and students of various institutes across the state.
· **Marketing Coordinator**, *Vortex, the technical symposium of CSE department*: Contacted renowned brands and organizations to collaborate with Vortex and obtain corporate sponsorship and funding.
· **Deputy Manager**, *Festember, the cultural festival of NIT Trichy*: Organized workshops, informal events and film festivals engaging a footfall of 10,000+ participants from across 500+ institutes of India.
· **Institute Student Mentor**, *Orientation Team*: Organized orientation events and lectures by eminent personalities for 900+ freshmen, mentored 10 freshmen helping them get accustomed to the institute life.
· **Student Volunteer**, *National Service Scheme(NSS)*: Completed two years of social service through plantation drives, awareness campaigns and orphanage visits.