

# Abhinav Agarwal

CS Graduate student at University of Washington skilled in full stack development and machine learning, looking for Summer 2022 software development internships

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## 🎓 EDUCATION

**Master of Science in Computer Science and Software Engineering**, University of Washington

**Expected Coursework:** Machine Learning, Algorithm Design, and Analysis, Advanced Topics in Computer Vision, Evaluating Software Design, Software Management, Multimedia Database Systems

Sep 2021 –  
2023  
Bothell, WA

**Bachelors of Technology (Information Technology)**, Manipal Institute of Technology

**Relevant Coursework:** Data Structures, Distributed Systems, Operating Systems, Pattern Recognition, Big Data Analytics, Data Warehousing, Data Mining, and Advanced Calculus

Jul 2017 –  
Jul 2021  
Manipal, India

## 💼 PROFESSIONAL EXPERIENCE

**Graduate Student Research Project Member**, Sponsored by Microsoft, Nvidia and UW

- Performing several studies to evaluate how *artificial intelligence* could be more *energy-efficient*.
- Centered around **Yolov4**, **BERT**, and **Turing-NLG** implemented in **Pytorch** and **ONNX**.

Apr 2021 –  
present  
Seattle

**Software Development Engineer (SDE) Intern**, ICICI Lombard

- Built new APIs for 5 different customer-facing **ASP.NET** applications using **SQL** database.
- Migrated a project with *multiple tables and procedures* from **MS SQL** to **Oracle SQL** Database.

Feb 2021 –  
Jul 2021  
Mumbai, India

**Summer Intern**, Xu Labs, Carnegie Mellon University

- Used *Parameter Pruning & Quantization* to reduce the size of a large and complex **Tensorflow** convolution neural network by 75% while preserving up to 70% of original accuracy.
- Built a *GUI web application* for exploration of MRC models using **Django** framework and *Metro UI*

Jul 2020 –  
Nov 2020  
Remote

## 🗣️ LANGUAGES AND FRAMEWORKS EXPERIENCED IN

### Programming

C, C++, C#, Java, MATLAB

### Web Development

HTML, CSS, JavaScript, NodeJS, Nginx, Django

### Machine Learning

R, Python, Tensorflow, Pytorch, ONNX

### Databases

MS SQL, Oracle SQL, My SQL, MongoDB

## 📜 CERTIFICATES

### Business Foundations Specialization

By Wharton School of Business (online)

### Deep Learning Specialization

By deeplearning.ai

### Data Science Specialization

By Johns Hopkins University (Online)

### Machine Learning for Trading

By Google Cloud, New York Institute of Finance

## 📖 PUBLICATIONS

**Dynamic Identification of Learning Styles in MOOC Environment Using Ontology Based Browser**

**Extension**, International Journal of Emerging Technologies in Learning (ijET)

- Developed a Firefox browser extension that **scrapes** usage data from MOOC platforms.
- Built Using **NodeJS** running on free **GCP AppEngine**. Converts JSON data into SQL for storage
- Designed *Python scripts* to generate *recos* from the collected data by predicting **FSLSM** styles.

Jun 2021

**(Under Review) Natural Language Query Formalization to SPARQL For Querying Knowledge Bases Using Rasa NLU Pipeline**, Natural Language Semantics

- Designed an **NLP-based** conversational AI agent (*chatbot*) using **RASA NLU** and **Python** to query **OWL ontologies**. Converts plain English language queries into SPARQL queries.
- Built *scripts* to use RASA's internal testing suite and achieved up to 97% keyword accuracy.

Aug 2020

## 📁 SELECTED PROJECTS

**Portfolio Website**, Published a website using Gatsby/React.js on GitHub Pages

- Deployed VM on Oracle Cloud with 4 **ARM** vCPUs and 24 GB RAM for hosting live *demos*.
- Installed Ubuntu, Node, Nginx, PM2, Mayavi, and NoMachine in an **AARCH64** environment.

Jun 2021

**Facial Recognition Attendance System**, Lightweight and browser based prototype

- Uses Microsoft Azure APIs for face validation and **MongoDB** as the application database.

Mar 2020

**Electronic Assessment System**, Full-featured, production-ready and lightweight

- Developed as per the **custom requirements** of my instructors at my undergrad college.
- Contains 20 **AJAX APIs** built using NodeJS **Express** and **Nginx**. Uses MySQL as the database.
- The frontend is built using **HTML5/CSS3** based Metro UI. Uses **Memcached** for session encryption.

Aug 2019