# Abhinav Agarwal

CS Graduate student at University of Washington Skilled in full stack development and machine learning currently 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, USA

**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 and Combinatorics.

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, GPT3, BERT,** and **Turing-NLG** implemented in **Pytorch** and **ONNX**.

Apr 2021 — present  
Seattle,  
United States

**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** | **Web Development** | **Machine Learning** | **Databases** |
| --- | --- | --- | --- |
| *C, C++, C#, Java, MATLAB* | *HTML,CSS, JavaScript, NodeJS, Nginx, Django, CGI* | *R, Python, Tensorflow, Pytorch, ONNX* | *MS SQL, Oracle SQL, My SQL, MongoDB, Memcached* |

## 📜 CERTIFICATES

| **Business Foundations Specialization** ⧉ | **Deep Learning Specialization** ⧉ | **Data Science Specialization** ⧉ | **Machine Learning for Trading** ⧉ |
| --- | --- | --- | --- |
| *By Wharton School of Business (online)* | *By deeplearning.ai* | *By Johns Hopkins University (Online)* | *By Google Cloud, New York Institute of Finance (Online)* |

## 📰 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 *recommendations* 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 Free Tier* with 4 **ARM** vCPUs and 24 GB RAM for hosting *demos* of 6 projects.
- *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. Works in browser.

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 layer.
- The frontend is built using *HTML5/CSS3* based Metro UI. Uses **Memcached** for session encryption.

Aug 2019