

# KARANDEEP SINGH

## SOFTWARE DEVELOPER

### CONTACT



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1910 Simcoe Street North

### EDUCATION

#### Durham College

##### Artificial Intelligence

JAN 2023- AUG 2023

My degree in Artificial Intelligence has equipped me with the knowledge and skills to design, develop, and implement intelligent systems and technologies that can perform complex tasks with minimal human intervention.

##### Data Analytics

MAY 2022- DEC 2022

My degree in Data Analytics has equipped me with the knowledge and skills to collect, process, and analyze large sets of data in order to derive insights and make data-driven decisions.

### DELHI UNIVERSITY

#### BSC. COMPUTER SCIENCE

2019-2021

My BSc degree in Computer Science has equipped me with a strong foundation in computer programming, algorithms, and data structures. I have gained expertise in the design, implementation, and maintenance of software systems, as well as the ability to solve complex problems and think critically.

### PROFILE

I am a highly motivated and results-driven professional with a passion for Artificial Intelligence. With exceptional interpersonal skills and a proven ability to meet deadlines, I thrive in challenging environments and strive for excellence in all aspects of my work. My goal is to contribute to the development of innovative AI solutions and make a meaningful impact in the field. With a strong background in communication and organization, I am confident in my ability to work collaboratively with a team to achieve shared goals. I am seeking a challenging role in the field of AI where I can leverage my skills and knowledge to drive progress and growth. As a self-starter who is committed to continuous learning and development, I am excited about the opportunity to join a dynamic team of like-minded professionals who are passionate about pushing the boundaries of what is possible in the world of AI.

### WORK EXPERIENCE

#### Research Assistant

AI/HUB Durham College

MAR-JUN 2023

- As a Research Assistant at AI/hub-Durham College, I actively contributed to various research projects focused on artificial intelligence and machine learning.
- Project Development and Implementation: I played a crucial role in project development and implementation, working closely with a team of researchers and developers.
- Algorithm Evaluation and Optimization: I actively participated in evaluating and optimizing machine learning algorithms and models. I conducted experiments, collected performance metrics, and fine-tuned models to achieve optimal results, considering factors such as accuracy, precision, recall, and computational efficiency.
- Research Documentation and Reporting: I was responsible for documenting research methodologies, experimental setups, and findings.
- Collaboration and Teamwork: Throughout my role as a Research Assistant, I demonstrated strong collaboration and teamwork skills. I actively engaged in regular meetings, discussions, and knowledge-sharing sessions with team members, contributing to a dynamic and innovative research environment.

#### Free Lancing

2020-2022

- Independent Contractor: As an independent contractor, I undertook various freelancing projects, leveraging my expertise in web development.
- Custom Website Development: I developed custom websites from scratch, ensuring a seamless user experience and incorporating client-specific requirements.
- Client Collaboration and Communication: I maintained effective communication with clients throughout the freelance projects. I actively engaged in understanding their requirements, providing regular updates, and seeking feedback to ensure client satisfaction and project success.
- Problem Solving and Troubleshooting: As a freelancer, I faced various challenges and technical issues during project execution. I demonstrated strong problem-solving and troubleshooting skills, efficiently resolving issues to deliver high-quality solutions within agreed-upon timelines.

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### EXPERTISE

- Proficiency in C++, Python, [Django](#), and Django Rest framework.
- Strong understanding of machine learning algorithms: I have a deep understanding of various machine learning algorithms, allowing me to effectively apply them to solve complex problems. This expertise includes supervised learning algorithms (such as linear regression, logistic regression, decision trees, and random forests), unsupervised learning algorithms (such as clustering and dimensionality reduction), and ensemble methods.
- Strong understanding of deep learning architectures: I have a solid grasp of deep learning architectures, including [Artificial Neural Networks \(ANN\)](#), [Convolutional Neural Networks \(CNN\)](#), [Recurrent Neural Networks \(RNN\)](#), [Long Short-Term Memory \(LSTM\)](#), [Gated Recurrent Units \(GRU\)](#), [Autoencoders](#), [Generative Adversarial Networks \(GANs\)](#), and [Transformers](#).
- Knowledge in financial and insurance fields: In addition to my technical skills, I have domain knowledge in the financial and insurance sectors. I have cleared part 1 of the financial risk management exam from GARP and 2 Actuarial Science Exams from IFOA.
- Integration of technologies for comprehensive solutions: I have experience integrating the mentioned technologies to build comprehensive solutions. For example, I can leverage machine learning algorithms and deep learning architectures within Django applications to create intelligent systems, such as chatbots with natural language processing capabilities or recommendation systems based on user preferences.
- Continuous learning and staying updated: I am committed to continuous learning and staying updated with the latest advancements in the mentioned technologies. This ensures that I can leverage the most cutting-edge tools and techniques to deliver innovative and efficient solutions.

### PROJECT WORKS

- Successfully developed a chatbot using ChatGPT and LangChain technologies, integrated into a Django framework, to assist college students at Durham College. This chatbot effectively addressed their queries and provided information on admissions, course registration, campus facilities, student services, and more. It helps in improving accessibility to information while reducing administrative workload. The chatbot can be accessed by clicking [here](#).
- Developed an application that utilizes LSTM (Long Short-Term Memory) model for next word prediction, specifically tailored to assist users in writing blog content based on their chosen genre. Built on the Django framework, the user-friendly interface allows seamless interaction with the prediction system, empowering users to create engaging blog content with accurate and intuitive next word suggestions. The source code of the application can be viewed by clicking [here](#).
- Successfully developed a GAN (Generative Adversarial Network) that generates realistic images of handwritten digits from the MNIST dataset. By training the generator and discriminator components of the network, it learns to produce high-quality synthetic images that closely resemble the original dataset. This project showcases my expertise in GANs, deep learning, and image generation, demonstrating my ability to create models that generate realistic and visually accurate images. The source code can be viewed by clicking [here](#).
- I have extensive experience in natural language processing (NLP), utilizing various techniques and models to analyze and understand textual data. Through the application of NLP algorithms, such as sentiment analysis, named entity recognition, text classification, and question-answering, I have been able to extract valuable insights and derive meaningful information from large volumes of text. My expertise in NLP has allowed me to develop sophisticated solutions that improve language understanding, text generation, and language-based tasks, demonstrating my proficiency in this field. The source code can be viewed by clicking [here](#). Text Summarization codes can be viewed by clicking [here](#).

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TO WHOM IT MAY CONCERN,

I am an experienced developer with a passion for machine learning, artificial intelligence and finance. My technical skills include proficiency in C++, Python, Django, and Django Rest framework, as well as a strong understanding of machine learning algorithms and deep learning architectures such as ANN, CNN, RNN, LSTM, GRU, Autoencoders, GAN's, and Transformers. I also have knowledge in the financial and insurance fields, which allows me to understand the nuances of these industries and develop appropriate solutions.

In my current role at AI/hub-Durham College, I have worked as a full stack developer, where I developed custom features and documentation, and integrated a GPT model in a survey website. Additionally, for my final projects I developed the entire website [chatdc.ca](http://chatdc.ca). Through these experiences, I have gained valuable skills in web development, project management, and problem-solving.

I have also gained extensive project-based experience, where I helped develop websites with Chat-GPT integration, and demonstrated my solid understanding of natural language processing techniques and models, including sentiment analysis, named entity recognition, text classification, and question-answering. Furthermore, I have experience fine-tuning large language models for core-specific tasks, working with Lang-Chain and Vector Database, as well as Time Series Forecasting. My experience in these areas makes me confident in my ability to apply these techniques to real-world problems.

Additionally, I am proficient in working with Tableau and Power BI, and have experience working with the Hugging Face Platform. These skills have allowed me to effectively communicate complex data insights to stakeholders and develop solutions that meet their needs.

With my skills and experience, I am confident that I can make a meaningful contribution to a technical team.

SINCERELY,

KARANDEEP SINGH

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