

# Amirreza Sokhankhosh

☎ 431-293-6515   ✉ [amirreza.skhn@gmail.com](mailto:amirreza.skhn@gmail.com)   [in LinkedIn](#)   [GitHub](#)   [Portfolio](#)

## HIGHLIGHT OF RELEVANT SKILLS

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- **Back-End Development:** Expertise in building and maintaining **RESTful APIs** using **Django, Nest.js, Express.js, Flask**, and **FastAPI**.
- **Front-End & Full-Stack Integration:** Hands-on experience aligning **React + Tailwind** interfaces with backend services for seamless user experiences.
- **Databases & Data Modeling:** Proficient with SQL and NoSQL systems (**PostgreSQL, MySQL, MongoDB**), including schema design, stored procedures, and efficient querying.
- **Programming Languages:** Strong foundation in **Python, TypeScript, JavaScript**, and **Java**, with additional experience in **C++**.
- **Cloud & DevOps:** Familiar with containerization (**Docker, Kubernetes**), **CI/CD pipelines**, **GitHub Actions**, and cloud platforms such as **AWS** for scalable deployments.
- **AI & Data Integration:** Applied **LLMs, federated learning, time-series forecasting**, and predictive modeling to enhance application functionality and intelligence.
- **Collaboration & Agile Practices:** Experienced in **Scrum/Agile** environments, sprint planning, code reviews, and cross-functional teamwork.

## EXPERIENCE

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### University of Manitoba

Sep 2023 – Jul 2025

*Graduate Research Assistant*

*Winnipeg, Canada*

- Designed/developed four novel distributed AI architectures, emphasizing secure, scalable & efficient **system design and modular API development** (TensorFlow, PyTorch, Hyperledger Fabric, Express.js/Flask).
- Achieved significant system optimizations: reduced communication overhead by **85.2%** & increased fault tolerance by **62.7%**, demonstrating expertise in building reliable AI systems.
- Authored/contributed to multiple research publications in top-tier **IEEE** venues.

### Bobo App Ltd.

May 2024 – Aug 2024

*Full Stack Developer Intern*

*Winnipeg, Canada*

- Collaborated with a team at **MILA** in developing an efficient **chatbot** responsible for **customer service**.
- Accelerated product development by designing and implementing **RESTful APIs** using Supabase and **PostgreSQL**, enhancing backend functionality and data management.
- Automated data integration by developing a Python script to convert CSV data into executable SQL, significantly streamlining **database population**.
- Ensured seamless **full-stack integration** through close collaboration with the front-end team to align API specifications with user interface requirements.
- Contributed to **agile** workflow efficiency by utilizing the Atlassian suite (**Jira, Confluence**) for task management, documentation, and team coordination.

### University of Manitoba

Sep 2024 – Jun 2025

*Teaching Assistant*

*Winnipeg, Canada*

- Delivered academic and technical support to **over 400 undergraduate students** in core Computer Science courses: Python, Java, Data Structures & Algorithms, **Object Oriented Programming**, and Distributed Systems
- Guided students through complex coding projects and theoretical challenges, emphasizing problem-solving strategies, algorithm efficiency, and system design principles.
- Provided specialized technical assistance at the university's Help Centre, adeptly diagnosing and resolving programming issues and advising on effective coding practices.

*Full-stack Developer Intern*

- Drove the successful completion of a critical internal project, addressing key deficiencies in **API security, authentication, and data modeling** for production deployment.
- Developed robust RESTful APIs with AdonisJS and **Express.js**, implementing **JWT authentication** to secure user access and enable core application functionalities.
- Designed and implemented highly accurate MySQL database schemas for precise tracking and management of employee working and non-working hours, foundational for the project's business logic.
- **Deployed** fully functional features to the **live production server** and created thorough Swagger API documentation, facilitating seamless internal integration and knowledge transfer.
- Contributed to an Agile Scrum development team by actively tracking and managing personal tasks within ClickUp, ensuring efficient progress and clear communication within sprints and **CI/CD pipelines**.

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PROJECTS**MarkMate** | *React, Django, PostgreSQL, OpenAI API, LangChain* | [Link](#)

- Built a full-stack application with Django, React, PostgreSQL enabling automated assignment grading.
- Integrated custom LLM agents via LangChain to support semantic feedback and instructor dashboard.
- Designed secure REST APIs, containerized deployment, and CI/CD pipelines for production readiness.

**Paper Summarizer** | *Hugging Face Transformers, Ollama, OCR, LLMs* | [Link](#)

- Engineered a web application that extracts, OCRs, and summarizes academic papers using LLaVA and LLaMA.
- Built a modular backend with Flask for document parsing, model inference, and frontend presentation in React.
- Optimized inference pipelines for speed and usability in real-world research workflows.

**PyFed** | *PyPI, Socket, TensorFlow* | [Link](#)

- Developed a Python library to streamline federated training workflows across distributed clients.
- Designed abstractions for dataset handling, model orchestration, and client-server communication.
- Packaged for reusability and scalability, enabling integration into larger research and production environments.

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EDUCATION**University of Manitoba**

Sep 2023 – Aug 2025

*Master of Science in Computer Science (GPA: 4.4 / 4.5)**Winnipeg, Canada*

- **Relevant Coursework:** Security & Privacy, Deep Generative Modeling, Blockchain & Distributed Systems: A+

**K.N. Toosi University of Technology**

Sep 2018 – Feb 2023

*Bachelor of Science in Computer Engineering*

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TECHNICAL SKILLS**Languages:** Python, Java, JavaScript, TypeScript, Node.js, C++.**Web Frameworks & Libraries:** React, Django, Nest.js, Express.js, Flask, Adonis.js, Tailwind, React-Query, MobX**AI / Machine Learning:** TensorFlow, PyTorch, Numpy, Pandas, OpenCV, Transformers, LangChain, LangGraph, Scikit-learn, Keras, Matplotlib, TensorBoard, CUDA.**Cloud & DevOps:** Docker, Git, GitHub, Linux, CI/CD, AWS.**Databases:** PostgreSQL, MongoDB, MySQL, Redis, Db2, Supabase.**Tools & Methodologies:** Jira, Confluence, Swagger, ClickUp, Agile, Scrum.

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CERTIFICATES**Databases and SQL for Data Science with Python***IBM* | [Credential](#)**Neural Networks and Deep Learning***DeepLearning.AI* | [Credential](#)