

# YOUSSEF IBRAHIM

(HE/HIM)

MEng @ UAlberta | CS @UAlberta | AI Engineer @ RadicalX

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## PROFESSIONAL SUMMARY

As a Master of Engineering (MEng) student specializing in Software Engineering and Intelligent Systems at the University of Alberta and a graduate in Computer Science, I am an enthusiastic professional with a robust foundation in various programming languages including Python, Java, JavaScript, HTML, CSS, and C++. My skills encompass areas such as Artificial Intelligence, Web Development, Machine Learning, Cybersecurity, SEO, and Object-Oriented Programming.

In recent roles, namely an Artificial Intelligence Engineer position at RadicalX, I enhanced AI features using GPT-4 and spearheaded significant projects such as ReX, the AI Career Coach. Additionally, as a Software Engineer at Hootsuite, I engaged in both backend and frontend development, showcasing my proficiency in technologies like Node.js, Firebase, and React, and integrating payment solutions like Stripe for financial transactions.

My educational experience is further enriched by my roles as a peer tutor and undergraduate teaching assistant at the University of Alberta, where I refined my ability to effectively communicate complex concepts. I also participated in biometric information research as an undergraduate research assistant. Moreover, my internship in the supply chain management department at Precision Drilling demonstrated my analytical capabilities and my proficiency with tools such as SAP, AutoCAD, and Power BI.

I am also a proud member of the Golden Key International Honour Society and the Institute of Combinatorics and its Applications, which signify my dedication to academic excellence. I am keen to apply my diverse skill set to a progressive organization and am committed to staying abreast of cutting-edge technological advancements and striving to implement innovative solutions.

## SKILLS

- Machine Learning.
- SEO, OOP.
- Front and Back End Development.
- HTML, CSS, JS, Python, MATLAB, C++.
- Material Master.
- Application Development
- Cyber Security.
- Artificial Intelligence
- Algorithms.
- Supply Chain Management; SAP, AutoCAD, Power Bi.
- Web Development

## EXPERIENCE

**SEPTEMBER 2023 – SEPTEMBER 2024**

**ARTIFICIAL INTELLIGENCE ENGINEER, RADICALX.**

- Enhanced RadicalX's AI features using GPT-4, focusing on NLP, ML, and deep learning techniques.
- Conducted AI R&D for user experience, system optimization, and personalized learning; involved in data analytics for AI precision.
- Kept abreast of AI advancements, providing insights for platform enhancements.
- Developed AI models using ML and deep learning, ensuring data quality for model training.
- Optimized algorithms and models with the AI team, improving system performance and informing strategic decisions.
- Utilized advanced AI technologies like OpenAI, TensorFlow, Botpress, and Inworld.ai.

- Created ReX, the AI Career Coach, and developed adaptive learning and anti-fraud AI systems.
- Contributed to technical meetings with insights for problem-solving and innovation.
- Committed to ongoing learning in evolving AI technologies and methodologies.

#### **APRIL 2023 – SEPTEMBER 2023**

**RESEARCH ASSISTANTSHIP**, UNIVERSITY OF ALBERTA.

- Contributed to a multidisciplinary team researching biometric information measurement, ensuring all work aligns with the project's main research question.
- Assisted in the collection, organization, and analysis of biometric data, using a variety of data analysis and data visualization tools.
- Participated in research meetings, contributing to the development and refinement of research methodologies, data interpretation, and reporting of results.
- Collaborated with the principal investigator and research team to prepare reports and scientific manuscripts for publication.
- Conducted a comprehensive literature review to stay updated with current trends and advancements in the field of biometrics.
- Assisted in developing and implementing project protocols and standard operating procedures to ensure the integrity and quality of research data.
- Ensured compliance with ethical standards in the collection and handling of sensitive biometric information.
- Presented research findings at academic workshop.

#### **FEBRUARY 2022 – DECEMBER 2023**

**SOFTWARE ENGINEER**, HOOTSUITE, CALGARY, ALBERTA.

- Developed and debugged backend applications using Node.js and Firebase, ensuring optimal functionality and user experience.
- Implemented front-end features and optimizations using React, enhancing UI/UX across various software applications.
- Engineered a subscription and payout system utilizing Stripe, ensuring secure and efficient financial transactions.
- Established a robust connection with the AI Manager, facilitating seamless interaction between different software modules.
- Integrated Github Codespaces, enhancing collaborative software development and streamlining code deployment workflows.

#### **FEBRUARY 2022 – SEPTEMBER 2023**

**TEACHING ASSISTANT**, UNIVERSITY OF ALBERTA.

- Assisted professors in the delivery of specific Computer Science courses such as Formal Systems and Logic, File and Database Management, Computer Systems and Networks, Operating Systems, and Web Development.
- Facilitated small group discussions and lab work, ensuring students comprehend the course material and can practically apply theoretical concepts.

- Hold regular office hours to provide one-on-one guidance and problem-solving assistance to students, using personalized approaches based on the student's individual strengths and objectives.
- Aided in the preparation and grading of assignments, projects, and examinations, providing timely and constructive feedback to students.
- Developed a thorough understanding of course materials and maintain familiarity with current trends and advancements in the field of Computer Science to ensure relevant and updated instruction.
- Assisted professors in refining course curriculum based on student performance and feedback, ensuring that course objectives are met and material remains engaging.
- Coordinated with other teaching assistants and tutors to ensure consistent delivery of course material and shared best practices for student instruction.
- Assisted in the preparation and delivery of lecture materials and demonstrations as needed.

#### **JANUARY 2022– DECEMBER 2022**

##### **COMPUTER SCIENCE INTERN, PRECISION DRILLING, CALGARY, ALBERTA.**

- Assisted in the development and deployment of web-based applications as part of the Company-Wide Web Development Project.
- Collaborated with Software Engineers and IT Managers to design, code, and implement new features for the company's web applications, using languages such as JavaScript, HTML/CSS, and Python or Java.
- Conducted extensive testing to identify bugs and areas of improvement in the web applications, ensuring compatibility across different browsers and devices.
- Research, organize, and analyze data to communicate Software Development Life Cycle (SDLC) improvements across the organization, particularly regarding web development practices.
- Worked closely with the IT Business Analyst for data analysis, system architecture design, and reporting as needed using a variety of tools and technologies, including SQL and Power BI.
- Supported the roll-out of new web applications or features to different departments within the company, assisting in user training and adoption.
- Assisted in managing the lifecycle of web applications, including updates, patches, and version control, ensuring adherence to the company's software development standards.
- Reviewed user feedback, software bug reports, and system logs to enhance the performance and user experience of existing web applications.
- Participated in the development and refinement of APIs to facilitate the integration of web applications with other systems within the organization.
- Contributed to continuous improvement initiatives within the IT department, ensuring that the web-based systems developed meet the current and future needs of the business

#### **APRIL 2021– DECEMBER 2021**

##### **SUPPLY CHAIN MANAGEMENT INTERN, PRECISION DRILLING, CALGARY, ALBERTA.**

- Supported the development of Material Masters and other master data as a part of the Inventory and Procurement Optimization Project (IPOP).
- Supported with material creations within the Material Master and to research, organize data, analyze data, communicate Material Master Request process improvements across the organization.

- Worked with Purchasers, Equipment Managers, and Administrators to process requests for new material masters, identify gaps in data quality, and assist users in creating pick lists for maintenance and repairs.
- Worked with SCM Business Analyst and Asset Integrity Coordinator for data analysis and reporting as needed using a variety of softwares including SAP & Power Bi.
- Helped implement agreed vendor pricing and support roll out to field procurement.
- Supported vendor management activities and early phases of category management.
- Reviewed Material Masters and perform checks to ensure they align with Master Data Standards.
- Reviewed other data sources (such as an interactive parts catalogue, and other OEM parts lists) to enrich existing data.
- Assisted with continuous improvement initiatives for Supply Chain to ensure that the internal processes within the organization meet the needs of the business.

#### **JANUARY 2021 – PRESENT**

##### **PEER TUTOR, UNIVERSITY OF ALBERTA.**

- Taught learning modules and based lesson plans on the individual student's strengths and objectives.
- Assisted students in understanding complex Computer Science, and Mathematical concepts through interactive and engaging teaching methods.
- Collaborated with professors and academic advisors to align tutoring with course curriculum and ensure that students receive the support they need.
- Developed and maintain a thorough understanding of the course material in Computer Science and Mathematics to effectively guide students.
- Provided constructive feedback and guidance to help students improve their study habits and academic performance.
- Stayed up to date with the latest developments and trends in the field of Engineering, Computer Science, and Mathematics to incorporate relevant and current information in tutoring sessions.

### **HONORS & AWARDS**

#### **SEPTEMBER 2023**

##### **GOLDEN KEY INTERNATIONAL HONOUR SOCIETY MEMBER, UNIVERSITY OF ALBERTA.**

Proud member of the Golden Key International Honour Society, representing the top 15% of college and university sophomores, juniors, seniors, and exceptional graduate students worldwide, recognized solely for academic excellence. Golden Key, the world's largest collegiate honor society, is built on pillars of excellence, integrity, and service. This esteemed society offers a platform for personal and professional growth, fostering lifelong learning and a commitment to making a positive global impact. Golden Key members form a global community of high-achieving individuals dedicated to education and service. Membership into the Society is by invitation only. I'm excited to connect with fellow Golden Key members and explore avenues for collaboration, mentorship, and shared success.

#### **JANUARY 2022**

##### **MEMBER OF THE INSTITUTE (MTICA), THE INSTITUTE OF COMBINATORICS AND ITS APPLICATIONS.**

- An International Scholarly Society
- I have attended/presented:
- In 2023, Canadam, Winnipeg (Canada), June 2023.
- In 2022, Stinson66, Toronto (CA).

## **SEPTEMBER 2021**

### **A MEMBER OF THE ICA,** THE INTERNATIONAL COMMUNICATION ASSOCIATION (ICA)

A member in the Human-Machine Communication group that supports and promotes scholarship regarding communication between people and technologies designed to enact the role of communicator (i.e., artificial intelligence, robots, digital assistants, smart and IOT devices). HMC encompasses research within Human-Computer Interaction, Human-Robot Interaction, and Human-Agent Interaction and related areas of study focused on how people make sense of machines as communicators; the implications of people's interactions with communicative technology for individuals, organizations, and society; and the philosophical and critical critique of the design of these technologies and their integration into daily life.

## **EDUCATION**

### **SEPTEMBER 2024 – December 2025**

#### **MASTER OF ENGINEERING – SOFTWARE ENGINEERING AND INTELLIGENT SYSTEMS,** UNIVERSITY OF ALBERTA.

- Coursework and research focus on advanced topics in software engineering and intelligent systems, including software construction, verification, signal processing, robotics, and energy management. Current and planned courses include:
  1. Software Construction and Verification (ECE 522): Explores principles and techniques for constructing reliable software systems, emphasizing formal verification methods.
  2. Information Theory and Channel Coding (ECE 582): Covers fundamental concepts in information theory, including channel capacity, data compression, and error-correcting codes.
  3. Quality Engineering and Management (ENG M 512): Examines quality management principles, quality assurance practices, and engineering tools for process optimization.
  4. Ethics and Academic Citizenship (INT D 710): Addresses ethical challenges and responsibilities in academia and professional practice.
  5. Robotics (CMPUT 631): Introduces robotics, including kinematics, dynamics, control, and autonomous system programming.
  6. Topics in Software Engineering and Intelligent Systems (ECE 720): Focuses on advanced research trends and methodologies in software engineering for intelligent systems.
  7. Advanced Topics in Signal and Image Processing (ECE 740): Explores advanced algorithms and techniques in signal and image processing.
  8. Energy Audit and Management (ENG M 508): Focuses on energy management strategies and auditing techniques for industrial and commercial systems.

### **SEPTEMBER 2019 – April 2024**

#### **BACHELOR OF SCIENCE – COMPUTER SCIENCE,** UNIVERSITY OF ALBERTA.

- 3.85 GPA
- Mathematics Minor

**SEPTEMBER 2017 - JUNE 2019**

**INTERNATIONAL ADVANCED LEVELS (GCE A LEVELS), THE BRITISH SCHOOL OF KUWAIT.**

- Graduated with distinction.
- Graduated in top 5% of class.
- British A-level grades of A\*A\*A in Mathematics, Physics and Further Mathematics Respectively.
- Achieved 800/800 in the Mathematics SAT.
- Senior House Captain, BSK.
- Senior Prefect, BSK.
- Participant, Indian Institutes of Technology and the Indian Institutes of Management Mathematics competition.
- Participant, DESC Schools international Mathematics Competition.
- U16 Shotput Record holder in the middle east.

## **PROJECTS**

### **Aid Delivery App**

- Developed a delivery application for humanitarian aid organizations, focusing on real-time tracking and streamlined logistics. Built using React, Flutter, Firebase, Javascript, CSS, HTML, and Google Maps API.

### **Personal Portfolio Website**

- Designed and deployed a personal portfolio website showcasing projects, skills, and experience. Built with HTML, CSS, JavaScript for responsive design, and integrated APIs for interactive user experience.

### **Stock Market Monitor**

- Developed a Rust-based stock market analysis tool that monitors stock prices, performs financial analysis, and visualizes data.

### **Self-Balancing Binary Trees**

- Designed and implemented Red-Black Trees and AVL Trees using Rust with additional innovations to improve testing and code maintainability.

### **Malicious URL Detection Using Machine Learning**

- Engineered a machine learning-based model to detect malicious URLs, improving cybersecurity protocols. Leveraged Python, scikit-learn, and NLP techniques.

### **QR Check-In App**

- Built a robust QR-based check-in application for event management systems using Java, React, Node.js, and Firebase. Enabled seamless user registration and data tracking.

### **Operating System Project**

- Designed and implemented core components of an operating system simulator, including process scheduling and memory management, using Python.