

Lakshya Khanna

Systems Design Engineering @ UWaterloo

 Lakshya's Github  Lakshya's LinkedIn

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I'm an Engineering student with a strong interdisciplinary foundation and diverse co-op experience, looking to leverage my skills to advance technology and contribute to society.

Skills

Coding: Python, C#, C++, JavaScript, PHP, HTML, CSS

Technical: SQL, Excel, Linux, Azure DevOps, CI/CD, Unity, Git, PyTorch, TensorFlow, Scikit-Learn

Non-Technical: PowerBI, Tableau, JIRA, Salesforce, Visio, O365, GSuite, Agile PM, Quali Research (ethics)

Education

University of Waterloo BAsC Systems Design Engineering, Cognitive Science (Minor) Graduation
April 2024

Relevant Courses: Data Structures & Algorithms (C++); Human Factors; Testing, Verification & Validation; Deep Learning; Foundations of AI; User Interface; User-Centred Design Methods

Experience

Undergraduate Research Assistant – University of Waterloo **Mar 2023 - Current**

- Co-first author of research project investigating sustained attention, mind wandering, and perfectionism
- Spearheading the software development of an attention experiment in JavaScript for 100+ participants, eliciting user req., and developing iteratively to ensure the experiment's objectives are achieved
- Utilized UX/UI enhancements to optimize participants' engagement & minimize user biases/distractions
- Co-developed Research Ethics Board approval documents in alignment with federal/international standards, facilitating seamless experiment hosting
- Hosted SART (Sustained Attention Response Task) experiments with 75+ undergrad students

Research Engineer – WATOLINK **Sept 2023 - Current**

- Developed the largest known public EMG dataset by conducting research experiments for a neuromuscular speech product using biosensors and 75+ human participants in 4 months
- Led the design of the Standard Operating Procedure to assist researchers in hosting experiments by documenting/organizing all required steps and minimizing human error
- Co-wrote ethics documents while adhering to federal regulations, outlining procedures & potential risks

Python Developer Intern – CAE **May 2023 – Aug 2023**

- Developed a dynamic data visualization tool utilizing Python and HTML/CSS, enabling users to seamlessly generate and submit 9000+ customized documents to federal aviation regulators
- Reduced errors by 97% through rigorous testing, enhancing document accuracy and professionalism
- Employed black box testing methodologies and Azure DevOps tools to rigorously evaluate code in diverse environments, enhancing system reliability and readiness for production deployment
- Developed Visio visualizations to identify holistic improvements for the Product Owner resulting in a more complete client experience

Client Development Associate Intern – Atolio

Sept 2022 – Dec 2022

- Created client pipeline by researching and writing personalized emails to C-suite executives of start-ups
- Strategized short and long-term client acquisition initiatives with co-founders of a fast-growing start-up
- Organized an org-wide hackathon promoting inter-team collaboration & created POC of future products

Data Analytics Consultant Intern – PINpoint Info. Sys.

Jan 2022 – Apr 2022

- Consolidated 6 months of data (200,000 entries) from PowerBI & SSMS by developing Excel scripts and identified manufacturing inefficiencies, increasing client revenue by \$17MM annually
- Analyzed manufacturing operations using Lean Manufacturing methods and presented results to client

Velocity Technology Intern – Scotiabank

(12 months) Jan 2020 – Aug 2021

- Developed & presented dashboards/reports using PowerBI based on user requirements, used to implement informed changes to the data collection process in Canadian Banking services
- Organized IT service requests with stakeholders to ensure project req. were accurately fulfilled
- Implemented changes to Scotiabank's internal Cloud Support website using HTML/CSS, allowing users to access updated info and reducing the workload of user support staff
- Designed scalable processes for the Analytics team to develop user-centric dashboards, which decreased onboarding time by 25% and improved communication of service offerings
- Created network graphs with 14,000+ nodes using Python to visualize and analyze app dependencies, resulting in improved data transfer paths

Projects

Smart Helmet Concussion Detector: Capstone Project – Creating skull caps with IMUs and pressure sensors using First Engineering Principles to collect real time data and identify potential concussive impacts

Course Selection Optimizer: Developed an optimization software (POC) that assists engineering students with selecting courses to fulfill their degree requirements and achieve a minor of their choice

Case Study Analysis – N233YV Accident: Conducted a thorough analysis of the aircraft accident and identified systems design and cognitive ergonomic limitations to better understand process design

S:\HACKS (Scotiabank Hackathon): Managed a budget of \$7,500+ to organize and host a hackathon for top student talent and identified an applicable problem space/theme regard fintech services

Slackbot App Search Integration: Utilized Slack API and a search consolidation product to create a custom slash command where users enter queries and leverage Atolio's Search Engine product (dogfood)

Arduino Room Entry Device: Designed and installed a device using an Arduino Uno, ultrasonic wave sensor, and LED screen to notify the user if motion is detected near the door

Arduino Robot Arm: Robotic arm made of servomotors and an Arduino Uno that can lift and place small objects with predetermined inputs or manually using push buttons

Hobbies

Sports (volleyball, cricket, rock climbing, martial arts), AI Ethics, Humanitarian AI, Healthy Eating, Travelling