ADNAN **HAFEEZ, M.SC**

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Experienced Physicist and Scientist with extensive experience in software engineering roles developing solutions for healthcare enterprises. Posses a strong inclination and enthusiastic perspective to growth, learning and exploration. Trained in web development, data science, software development – Holds a master's degree in medical physics and a bachelor's degree in Physics, Chemistry and Engineering.

SKILLS

- **Programming (☆☆☆☆☆):** C#, Python, MVVM Architecture, MATLAB, HTML5, CSS, JavaScript, Bootstrap5.2.0, Jupyter Notebook, SQL, React, Angular.
- **Designing (☆☆☆☆☆):** Adobe XD, Photoshop, Dreamweaver, SharePoint, Office
- **Data Science (☆☆☆☆):** SciKit-Learn, NumPy, SciPy, Plot.Ly, Pandas, Matplotlib, MongoDB, TensorFlow, Tableau, Seaborn, OpenCV, NumPy
- **Version Control (☆☆☆☆☆):** Github, Git.
- **IDE Expert (☆☆☆☆☆)**: PyCharm, Microsoft Visual Studio
- **Familiar (☆☆☆)**: C, C++, Django, AWS, Azure, PowerShell.
- **Electrical Engineering (☆☆☆☆☆):** Fusion360, AutoCAD, Inventor, MeshMixer, LTSpice, Xilinx ISE, ModelSim, MATLAB Signal Processing Libraries.
- **Scrum Competence (☆☆☆☆)**

EXPERIENCE

2021 – PRESENT

MEDICAL PHYSICIST / SOFTWARE ENGINEER, GENESISCARE US

Lead software engineering for three Michigan hospital and radiotherapy centers located in Farmington Hills, Troy, and Madison Heights Michigan.

- Developed and maintained various multi-stage software development cycles, with design goals aimed at facilitating research in radiotherapy, radiation oncology, and patient treatments.
- Prioritized and developed software in .NET (C#) with an MVVM design architecture.
- Formulated and prepared SQL queries to send and receive data, created data centers for healthcare analytics, and small-scale data science research to discover patterns that can be utilized for smart clinical decision making.
- Commissioned, upgraded, and troubleshoot ad-hoc issues with proprietary software's written by colleagues utilizing both python and C# languages.
- Utilized a scrum framework for day-to-day upkeeping of work and projects.

2019 – 2021

MEDICAL PHYSICS ASSOCIATE, ALBERTA HEALTH SERVICES, TOM BAKER CANCER CENTRE

- Developed prototype scripts in MATLAB for image reconstruction algorithm testing and quality assurance. Tested and implemented final version of algorithms in either C# or python.
- Created pipeline projects in C# / Python for hospital wide clinical use.
- Co-lead the IRIS (Internal Radiotherapy Information Services) department at the cancer center.
- Implemented automation tasks using C#, Python, MATLAB, and gained extensive experience working with Visual Studio.
- Developed an easy-to-use GUI for orthovoltage treatment calculations in C# with an MVVM design pattern.

2017 – 2019

GRADUATE STUDENT – SOFTWARE DEVELOPER INTERN, CANCERCARE MANITOBA

- Reported directly to supervisor: Dr. Harry Ingleby.
- Designed and tested various algorithm in MATLAB and python for monthly image quality assurance of CT imaging detectors.
- Tested implementing finite impulse response of CT systems.
- Used Eclipse (Varian, Software) and Image contouring software by Varian to extract DICOM images and apply reconstruction filters, image segmentation and registration filters to prepare images analysis. Analyzed and reported results in professional reports – presented to department physicist and scientists.
- Programmed a routine image analysis software in C# for image segmentation and noise filtering.
- Wrote an multi-stage python algorithm for calculating the modulation transfer function (MTF) and Noise Power Spectrum (NPS) for CT images.

2016 – 2017

DATA SCIENTIST INTERN, UNIVERSITY OF MANITOBA

- Reported directly to supervisor: Dr. Stephen Pistorius.
- Main languages used Python and C#, and Jupyter Notebook.
- Gained practical experience using machine learning algorithms for signal processing post processing and classifications.

EDUCATION

2020

B.ENG (ELECTRICAL ENGINEERING), CARLETON UNIVERSITY, ONTARIO

Selective Course List: Circuits & Signals, Foundations of Imperative Programming, O.O Software Development, Computer Organization, Electronics I&II, Digital Electronics, Communication Theory, Signal Processing, Digital Signal Processing.
GPA: 4.00

2019

M.SC (MEDICAL PHYSICS), UNIVERSITY OF MANITOBA

Thesis: Improved Quality Assurance Phantom for Characterization of Automatic Tube Current Modulation for Computed Tomography Systems.
GPA: 3.89

2017

B.SC HONOURS (PHYSICS AND CHEMISTRY), UNIVERSITY OF MANITOBA

Thesis: Synthesis for Forskolin Analogues as selective Adenyl Cyclase Activators.
GPA: 3.59

CERTIFICATIONS

- Artificial Intelligence & Machine Learning (2019)
- Eclipse Scripting API: A Guide for Physicists (2019)
- Foundations of User Experience (UX) Design (2022)
- Start the UX Design Process: Empathize, Define, and Ideate (2022)
- C# Master Class – Beginner to Advance Professional (2018)
- Python Object Oriented Microsoft Certification (2020)
- Python Master Class – Beginner to Advance Professional (2018)

EXTRACURRICULAR ACTIVITIES

- Carleton InSpace Rocket Design Team (2020-Present) – Avionics Team
- Bird Rehabilitation Center – Volunteer
- Endless passion for learning all things from software development, biophysics to electrical engineering.