YUTONG ZHAO

Physicist

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Winnipeg, Manitoba, Canada

中文

I am seeking a new position in research / data analysis. Physics to me is not only a method that humans trying to understand the universe but also an effective way to solve unknown problems. Frontier research requires the ability to analysis tones of data, and creative thinking to visualize the data and deliver messages to public. As a recently graduated Master student, I am willing to learn new knowledge and apply existing skills in the upcoming new position.

WORK EXPERIENCES

Teaching Assistant

University of Manitoba | 2019 - 2020

Giving lectures on how to solve physics example problems to enhance the students' understanding of physics concepts. Guiding undergraduate students to finish their experiments and the lab reports during lab section. Evaluating quizzes and lab reports. Provide feedback to the professor in charge of the course.

- Course PHYS 1050: Mechanics
- Course PHYS 1030: General Physics II

Research Assistant

University of Manitoba | 2016 - 2018

Designing experiments in the field of spintronics and metamaterials. Performing experiments, collecting data and analyzing data. Prepare manuscripts for publication based on teamwork.

Performing research work for Defence Research and Development Canada (DRDC) according to contract. Determine the explosive materials through measuring the dielectric properties using a novel method.

- Published 4 academic papers including Nature Communication.
- Contributed to a deeper understanding of light-matter interactions.
- These researches may provide potential applications on quantum computing.

PROJECTS

Microwave imaging technique

Published

Developing the microwave imaging using a spintronic sensor to detect the concealed object such as a pistol in a suitcase. This technique measures the magnetic field instead of the electric field of microwave signal. It can be used for weapon detection.

Explosive material detection

Confidential

The dielectric properties are varied from matrials to matrials. We demonstrate using a specifically designed microwave cavity to detect the explosives such as potassium nitrate and ammonium nitrate. This is a part of DRDC projects.

Real time life detection system

Published

Through measuring the microwave signal reflection, we can know where is life behind walls and concrete. The algorithm we developed can tell the breath rate or even heartbeats. These may have applications in rescue after an earthquake.

EDUCATION

MSc in Condensed Matter Physics

University of Manitoba, Winnipeg, MB (2018 - 2020)

University of Manitoba Graduate Fellowship (2019)

International Graduate Student Entrance Scholarship (2018)

BSc in Physics, First Class Honor

University of Manitoba, Winnipeg, MB (2014 - 2018)

Academic Achievement Prize (2015)

Sunil K. Sen Scholarship (2018)

Faculty of Science Summer Research Scholarship (2016)

SKILLS

Technical

Numberical Analysis : Computational Physics, Algorithm design, Mont-Carlo method

Web Crawler : Get data / files from webpages

Instrument Control : Automation on data collecting and experimenting

LaTeX / Microsoft Office : Word, Excel, Excel, Word, PowerPoint, Publisher...

3D modelling & Engineering Drawing: SolidWorks, AutoCAD

Finite element analysis on microwave frequency: CST Microwave Studio & COMSOL Multiphysics.

Professional

Effective communication

Respectful

Team work

Flexible work time

Strong problem solver

Good time management

LANGUAGES

English (Fluent)

Chinese, Mandarin (Native)

OTHERS

Driver license / Boat licence

Computer repair

Willing to relocate.