

# Shaurya Seth

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## EDUCATION

### UNIVERSITY OF ALBERTA

#### BSc IN PHYSICS

Apr 2023 | Edmonton, AB

Department of Physics

GPA: 3.2 / 4.0

## LINKS

Github:// [shauresh](#)

LinkedIn:// [shauresh](#)

Medium:// [shauresh](#)

## COURSEWORK

### GRADUATE

Reinforcement Learning (Rich Sutton)

### UNDERGRADUATE

Reinforcement Learning (Martha White)

Classical Mechanics

Quantum Mechanics

General Relativity

Particle Physics (Roger Moore)

Electromagnetism

Thermodynamics

Linear Algebra

Differential Equations

Industrial Organization

Energy Economics

## SKILLS

### PROGRAMMING

Languages:

Python •  $\text{\LaTeX}$

Libraries:

PyTorch • NumPy • Pandas

Scikit • OpenCV • RDKit

XGBoost • Matplotlib

### SOFTWARES

Solidworks • COLMAP

Excel • Illustrator

PyMol

## EXPERIENCE

### 48HOUR DISCOVERY | INTERN

Apr 2023 – Present | Edmonton, AB

Using transformers for drug discovery.

## RESEARCH

### NOBES RESEARCH GROUP | VOLUNTEER

Apr 2022 – Jul 2022 | Edmonton, AB

Worked with **David Nobes** to analyze fuel cores for nuclear microreactors.

### RLAI LAB | UNDERGRADUATE RESEARCHER

Apr 2021 – Sep 2021 | Edmonton, AB

Worked with **Martha White** and **Adam White** to optimize a **water treatment plant** using reinforcement learning.

### DERDA RESEARCH GROUP | UNDERGRADUATE RESEARCHER

Apr 2019 – Jun 2021 | Edmonton, AB

Worked with **Ratmir Derda** and **Russ Greiner** to create **GlyNet**, a deep learning model that predicts protein-carbohydrate interactions.

## PROJECTS

- **pyramidify** - Plot camera poses in 3D for creating NeRFs.
- **water-project** - A visualizer and a prediction agent for a water treatment plant.
- **microreactor** - Thermal analyses of fuel core of a nuclear microreactor.
- **glynet** - A multi-task neural network for predicting protein-glycan interactions.
- **phage-counting** - Counting phages by detecting plaques using image classification.
- **8-bit-glycan-draw** - A tool for drawing pixelated glycans for image recognition.
- **polynomial-evolution** - Evolving polynomials using natural selection.
- **synapsify** - Artificial neurons with real action potentials.
- **article-networks** - Visualizing connections between PubMed research papers.

## AWARDS

2021 Alberta Innovates Summer Research Studentship

2021 GlycoNet Summer Award

2020 Undergraduate Research Initiative Stipend

## PUBLICATIONS

GlyNet: a multi-task neural network for predicting protein-glycan interactions. *Royal Society of Chemistry*. 2022.

Genetically encoded multivalent liquid glycan array displayed on M13 bacteriophage. *Nature Chemical Biology*. 2021.