

# Ishrak Hayet

📍 Raleigh, NC, USA

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## SUMMARY

Third-year CS PhD student at NCSU working in the Software Engineering research area. Over 6 years of experience in software and machine learning engineering, focusing on advancing software testing methodologies and debugging tools. Research combines practical development skills with cutting-edge innovations in reliable and AI-assisted software engineering. Seeking a Summer 2025 internship opportunity. No sponsorship is required now or in the future. Will self-petition for I140 NIW.

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## EDUCATION

### PhD in Computer Science

North Carolina State University • Raleigh, NC • GPA 3.94/4.00

May 2026

### MSc in Computer Science

University of Kansas • Lawrence, KS • GPA 3.85/4.00

May 2022

### BSc in Computer Science and Engineering

IUT • Dhaka, Bangladesh • GPA 3.84/4.00

Dec 2017

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## EXPERIENCE

### Software Engineering Graduate Researcher

WISER Lab, North Carolina State University • [github.com/ncsu-swat](https://github.com/ncsu-swat)

Sep 2022 - Jun 2026

- Invented a partial code execution technique using feedback-directed mock generation and neural type inference with > 80 % coverage.
- Developed a prompt engineering framework to generate and repair JUnit test oracles using LLMs beating SoTA accuracy by > 10 %

### Machine Learning Privacy Graduate Researcher

InfoSec Lab, University of Kansas • [github.com/ihayet/Invernet](https://github.com/ihayet/Invernet)

Sep 2019 - Jun 2022

- Built a deep neural model to infer private natural language dataset from pre-trained and fine-tuned embeddings with > 50 % accuracy
- Trained Word2Vec, GloVe, and BERT vectors and built LSTM, CNN, and Transformer models for datasets with 10000 + samples

### Software Developer

Porate Chai • [gitlab.com/poratechai](https://gitlab.com/poratechai)

Feb 2018 - Aug 2019

- Implemented a matchmaking Android app with a RESTful Node.js application server; accessed by 1000 + users
- Designed application system, and matchmaking server and used local SQLite database caching to optimize loading times < one second

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## PROJECTS

### Incompleter

- Developed a neuro-symbolic OOP Python tool to facilitate reliable reuse of incomplete code from Stack Overflow
- Published a technical research paper in the main research track of ISSITA 2024, a top-tier Software Engineering conference

### ChatAssert

- Implemented a few-shot prompting framework with code summaries, execution feedback, and identifier fuzzing for test oracle generation
- Achieved high BLEU, CodeBLUE, Rouge, and PIT mutation scores (accepted at IEEE Transactions on Software Engineering)

### Invernet

- Devised a differential vector embeddings inference model to expose properties of and reconstruct fine-tuning natural language datasets
- Obtained high precision and recall on two real-world datasets and published at Findings of EMNLP 2022, a premier NLP conference

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## SKILLS

### Development

Python, Java, Kotlin, JavaScript – Express, Node.js – PostgreSQL, Mongo – OAuth – AWS Lambda, S3 - Docker

### Testing

JUnit, JaCoCo, Mockito, PIT, Jasmine, Cucumber, PyTest – Maven, Gradle, Jenkins, Selenium, Git, GH Workflows

### Machine Learning

Numpy, Pandas, PyTorch, Keras, HuggingFace, OpenAI API, CodeLlama, Mistral