Muhammad Salman Abid

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Education

Cornell University *Ithaca, NY*

PHD IN COMPUTER SCIENCE *Aug. 2024 - Present*

Habib University *Karachi, Pakistan*

BS IN COMPUTER SCIENCE *Aug. 2018 - June. 2022*
- **CGPA**: 3.68/4.0, **Major GPA**: 3.72/4.0
- Minor in Electrical & Computer Engineering
- Undergraduate Capstone in CV & Image Synthesis (see: Fabric Sketch Augmentation & Styling via Deep Learning & Image Synthesis)

Research

Research Intern – Intelligent Code Analysis Testing (CAT) Lab *Illinois, USA (Remote)*

SUPERVISED BY REYHANEH JABBARVAND (UIUC) AND DARKO MARINOV (UIUC) *Feb. 2024 – July 2024*
- Worked with PhD student Ali Ibrahimzada on their project for **automating code translation** using LLMs
- Contributed to testing LLM-translated code using compositional testing with GraalVM

UIUC+ Summer Undergraduate Research in Software Engineering *Illinois, USA (Remote)*

SUPERVISED BY DARKO MARINOV (UIUC) & SAIKAT DUTTA (CORNELL) *May. 2023 – Jan 2024*
- Built interop bindings between **Java** and **Python** using **GraalVM** to embed Python into existing Java programs. Translated and embedded Apache's Commons CLI using GraalPy
- Translated part of Cornell's DeathStarBench microservice suite from **Go** into both **JavaScript** and **Rust**, while ensuring plug-n-play compatibility with the original cluster
- Conducted **architectural analysis** of popular Python Machine Learning libraries (including **PyTorch** & **Tensorflow**), particularly of their ports to other PLs such as Java & JavaScript

Publications

CONFERENCE PROCEEDINGS

2024	**GlueTest: Testing Code Translation via Language Interoperability**, **Muhammad Salman Abid**, Mrigank Pawagi, Sugam Adhikari, Xuyan Cheng, Ryed Badr, Md Wahiduzzaman, Vedant Rathi, Ronghui Qi, Choiyin Li, Lu Liu, Rohit Sai Naidu, Licheng Lin, Que Liu, Asif Zubayer Palak, Mehzabin Haque, Xinyu Chen, Darko Marinov and Saikat Dutta. In: *ICSME'24 NIER*	*TBA (Accepted)*
2023	**Fabric Sketch Augmentation & Styling via Deep Learning & Image Synthesis**, Omema Ahmed, **Muhammad Salman Abid**, Aiman Junaid, Syeda Saleha Raza. In: *EvoMUSART 2023. Lecture Notes in Computer Science, Springer, Cham.*	*[Paper]*
2022	**Automation of Fabric Pattern Construction using Genetic Algorithms**, Omema Ahmed, **Muhammad Salman Abid**, Aiman Junaid, Syeda Saleha Raza. In: *ISMSI 2022*	*[Paper]*

Open-Source Contributions

2023	**Language runtime bug report**, Oracle's GraalPython	*[Issue] [PR]*
2023	**Compiler bug fix**, Winglang Programming Language	*[PR]*
2023	**Flaky test fix**, SOFABoot Framework (based on Spring Boot)	*[PR]*
2023	**Dataset**, UIUC International Dataset of Flaky Tests	*[PR]*

Work Experience

CreditBook *Karachi, Pakistan (Hybrid)*

FULL STACK ENGINEER *Jun. 2022 - Present*
- Built async payment integrations with leading financial institutions in Pakistan
- Designed a pipeline for automated KYC document verification using CV and ML
- Bootstrapped CreditBook's core banking system, catering to 100s of lending operations daily

Honors & Awards

DOMESTIC

2022	**Award,** Best Capstone for Computer Science (2021 - 2022), *Habib University*	*Karachi, Pakistan*
2018	**Award,** 50% Merit Scholarship for Academic Excellence, *Habib University*	*Karachi, Pakistan*

Teaching Experience

2024   **Teaching Assistant**, CS 3410 Computer System Organization and Programming   *Cornell University*
2021   **Teaching Assistant**, CS 232(L) Operating Systems   *Habib University*
2021   **Teaching Assistant**, EE/CS 371/330 Computer Architecture   *Habib University*
2020   **Teaching Assistant**, CS 101(L) Programming Fundamentals   *Habib University*

Student Leadership

2021   **Vice-President**, Natural Science Club   *Habib University*
2021   **Representative**, Academic Affairs (part of Student Government)   *Habib University*
2019   **Organizing Committee**, Google I/O Extended - Karachi   *Habib University*