DIVYA BAJAJ

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OBJECTIVE

A dedicated and skilled computer science professional with a strong foundation in programming language concepts, pursuing a Ph.D. in Computer Science. Bringing a rich blend of teaching experience, research expertise in generating explanations for functional programs, and a deep interest in leveraging natural language models for program synthesis. My greatest strengths lie in problem-solving and analytical thinking. I approach a problem by systematically breaking it down to simpler tasks and devising a step-by-step solution.

EDUCATION

University of Texas Rio Grande Valley (UTRGV), Texas, USA (GPA 4.00/4.00)
August 2024 – Present   Doctor of Philosophy (PhD), Computer Science

Oregon State University (OSU), Oregon, USA (GPA 3.85/4.00)
Sept 2018 – Sept 2021   Master of Science (M.S.), Computer Science
                                        Thesis: Customizable Visual Traces for Program Explanations

The NorthCap University (NCU, Formerly ITM), Haryana, India (CGPA 9.71/10.00)
July 2013 – June 2017   Bachelors in Technology (B.Tech.), Computer Science

PUBLICATIONS

- Adaptable Traces for Program Explanations
  Divya Bajaj, Martin Erwig, Danila Fedorin, Kai Gay
  *Asian Symposium on Programming Languages and Systems (**APLAS 2021**).*
- A Visual Notation for Succinct Program Traces
  Divya Bajaj, Martin Erwig, Danila Fedorin, Kai Gay
  - *Journal of Computer Languages (**COLA 2023**)*
  - *Proceedings of IEEE Symposium on Visual Languages and Human-Centric Computing (**VL/HCC 2021**).*

PROFESSIONAL EXPERIENCE

Department of Computer Science, University of Texas Rio Grande Valley
Sept 2022 – Present   Lecturer I
- Instructed diverse programming language courses to CS and non-CS students.
- Mentored Senior projects for 3 teams of 3-4 students each

Department of Computer Science, South Texas College
Jan 2022 – July 2022   Lecturer
- Delivered various courses in C++, Python, and computer fundamentals.

Department of Computer Science, South Texas College
Nov 2021 – Dec 2021   Lab Technician
- Provided comprehensive programming support and guidance with multiple CS courses, improving student understanding.

Department of Computer Science, Oregon State University
Jan 2019 – Sept 2021   Research Assistant
- Developed new operational semantics to generate simpler proof Directed Acyclic Graphs (DAGs).

- Designed query language that transforms proof DAGs to generate program explanations that led to systematic reduction in size of traces for 21 well-known example programs by at least 80%.
  <u>Teaching Assistant</u>
- CS527 Error-Correcting Codes
- CS381 Programming Language Fundamentals
- CS362 Software Engineering II

Abacus Desk IT Solutions Pvt. Ltd.
June 2016 – July 2016   Intern, Software Development
- Developed and implemented algorithm for seat-allocation for college exams using PHP.

BodyWorks – A Unit of Turnsteps
June 2015 – Aug 2015   Intern, Software Development
- Leveraged OpenCart framework to develop backend and integrate payment gateway for e-commerce website for fitness consultant.

OTHER PROJECTS

July 2016 – June 2018   Medicare Cards, Major Project for B.Tech. at NCU
- Developed android application to store medical history of individuals using Firebase. Also, designed API to access this information using Near Field Communication (NFC) cards.

July 2014 – Nov 2014   Developed login and update feature for a Student Information System.

CONFERENCE PAPER REVIEW EXPERIENCE

- *Proceedings of IEEE Symposium on Visual Languages and Human-Centric Computing* 2021
- *Symposium on Implementation and Application of Functional Languages 2020*
- *Proceedings of IEEE Symposium on Visual Languages and Human-Centric Computing* 2020

RELEVANT SKILLS

- Comprehensive knowledge and experience in **language design, domain-specific languages, type systems and operational semantics.**
- Extensive programming experience in C, C++, Haskell, Java, and Python.
- Proficiency in HTML, CSS, PHP, Idris, Bootstrap and Shell scripting, Visual Studio Code, Visual Studio, Linux and Unix environment.

SELECTED HONORS & AWARDS

- Jan 2019 – Sept 2021 Research and Teaching Assistantship (full tuition & stipend), **OSU**
- Dec 2017   Gold Medal for university-wide securing first position in B.Tech., **NCU**
- July 2013–June 2017 Scholarship for securing first position in B.Tech., **NCU**