

Ashwin Prasad Shivarpatna Venkatesh

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Experience

Research Associate and Ph.D. Candidate

Heinz Nixdorf Institute, Paderborn University

📅 Sep 2020 – Current

📍 Paderborn, Germany

- Received 🏆 **DAAD Prize** for outstanding achievement by a foreign student.
- Research on **static analysis** for **Python** and its application in machine learning development processes.
- Represented the **Secure Software Engineering** research group in the **KI-Marktplatz** project. Currently representing our group in the **SustAInable Life-cycle of Intelligent Socio-Technical Systems (SAIL)** project.
- **Teaching** assistant for various courses and supervision of master students.

Projects

HeaderGen #GEN

Automated cell header generator for machine learning Jupyter notebooks with static analysis for Python. 🏆 Distinguished Paper Award

TypeEvalPy TYPE: EVALPY

A Micro-benchmarking Framework for Python Type Inference Tools.

Scalpel Scalpel

Involved in the development and maintenance of static analysis framework for Python. Created by researchers at the Monash university.

PyCG

Contributor to PyCG, an open-source call graph generator for Python.

Research Intern

JetBrains

📅 Aug 2023 – Sep 2023

📍 Berlin, Germany

- Design and implementation of a generic plugin for **PyCharm** and **DataSpell** to integrate state-of-the-art Python **source code analysis** into the IDE.
- Integrated **HeaderGen** into PyCharm as a proof of concept.

Student Research Assistant

Networking Department, Paderborn University

📅 Sep 2019 – Jun 2020

📍 Paderborn, Germany

- Research on 5G network infrastructure under **5G-PICTURE** project.
- Led the development efforts to demonstrate our research in **Barcelona**.
- **Co-authored** a research paper, contributions include: implementing, experimenting, and providing statistical evidence.

Student Software Developer

Diebold Nixdorf

📅 Sep 2017 – Sep 2019

📍 Paderborn, Germany

- Developed **business process automation tools** optimizing the company's resources. This impacted the assignment of tasks to developers.
- Designed and implemented a **metrics dashboard** that provides actionable insights into the development process.

Interests

Panorama Photography

Algo-trading

Lucid Dreaming

Cricket

Indian Classical Music

3D-printing

Power-lifting

Books

Domain

Python

Static Code Analysis

Applied Machine Learning

Literate Programming

Security

Education

Master of Science in Computer Science

Paderborn University, Germany | 2020 | Grade: 1.5

- **Project Group:** *Management of Services Across Multiple Clouds* | Grade: 1.0
Led a team of 8 master students for 1 year as part of project work at the university.
- **Seminar:** *Cryptography, Secure Systems Engineering* | Grade: 1.0, 1.7

Bachelor of Engineering in Computer Science

Visvesvaraya Technological University, India | 2015 | Grade: First class

Recent Publications

TypeEvalPy: A Micro-benchmarking Framework for Python Type Inference Tools | ICSE 2024 (CORE A*)

Enhancing Comprehension and Navigation in Jupyter Notebooks with Static Analysis | SANER 2023 (CORE A)

🏆 Distinguished Paper Award

Skills

- Linux | System design | Rapid prototyping | Test-driven | Scripting
- Python (*fluent*) | C/C++, Java, Js, PowerShell (*prior experience*)
- Git | Docker | LaTeX | Agile/Scrum | Office tools | ML Frameworks
- REST | MQTT | FastAPI

Personal Projects

Algorithmic Trading Bot

Automated trading in crypto and stock markets for Binance, Kite, and Lemon.markets.

RTCHub | ML Home Monitoring

Firmware, Middleware, Cloud, App. Complete solution built from scratch.

More on my 🏠 homepage