



Anshul Jindal

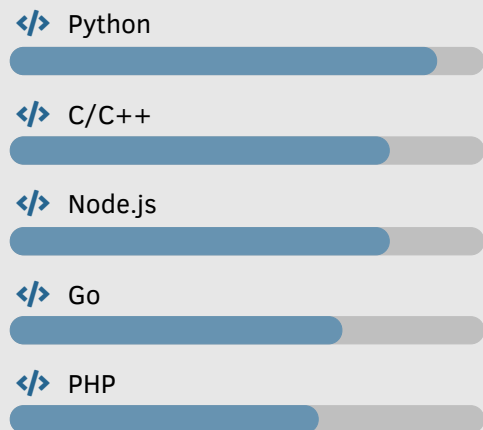
Doctoral Student at
TU Munich

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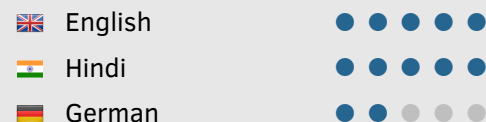
About Me

I am in my final year of Ph.D. and looking for a job related to cloud engineering. I have comprehensive knowledge of cloud computing technologies with main focus on serverless computing, auto-scaling, container orchestration tools, performance modeling of cloud-native applications and AIOps in the cloud infrastructure.

Programming Skills



Languages



Working Experience

- Dec. 2018 – Now** **Scientific Employee** TU Munich, Germany
Working in the direction of building Function Delivery Network, a network of distributed heterogeneous platforms providing Function-Delivery-as-a-Service (FDaaS), delivering the function to the right target platform based on the required computational and data demand.
- Aug. 2021 – Oct. 2021** **Research Internship** Huawei Munich Research Center, Germany
- Worked on Yolov5 model in Edge AI with focus on DNN Split Computing and Early Exiting for edge-cloud continuum.
- Also, Created automatic deployment infrastructure for EdgeAI with Kubernetes, KubeEdge and Sedna, using Ansible
- May 2019 – Nov. 2019** **External Project** BMW Munich, Germany
Developed a scalable infrastructure framework for automatically detecting the anomalies in the BMW's IT landscape Big data using Spark.
- Mar. 2017 – Nov. 2018** **Working Student** TU Munich, Germany
- Research in the area of Multi-layer (containers and virtual machine level) autoscaling for the cloud-based applications.
- Developed web-based cloud computing lecture exercises automatic correction framework (Website).
- July 2014 – Aug. 2016** **Senior Software Engineer** Samsung Semiconductor, India
- Worked in the memory division, which involved the design and development of the firmware for PCIe based NVMe Solid State Drives.
- Developed reservation and virtualization feature (SR-IOV) for a multi-function/multi controller architecture based Solid State Drive (Samsung's SSD, PM1725).
- Involved in development of an emulator of a SSD storage controller in C++.

Education

- 2019 – Now** **Ph.D.** TU Munich, Germany
Research in the area of distributed computing for extending serverless computing for heterogeneous compute/architecture devices.
- 2016 – 2018** **MSc. in Informatics (Ø 1.6/4)** TU Munich, Germany
Coursework: Cloud Computing, Efficient algorithms and Data structures, Deep learning for computer vision, Advanced computer architecture, Parallel programming, Virtualization techniques, Machine Learning.
- Master Thesis** TU Munich, Germany
Performance Model Derivation for Cloud-based Microservices Applications
- 2010 – 2014** **Bachelor Studies in Computer Science (Ø 8/10)** NIT Hamirpur, India
Coursework: Object oriented programming, Data structures and algorithms, Operating System, Computer Architecture, Computer Networks, Theory of Computation, Compiler Design.

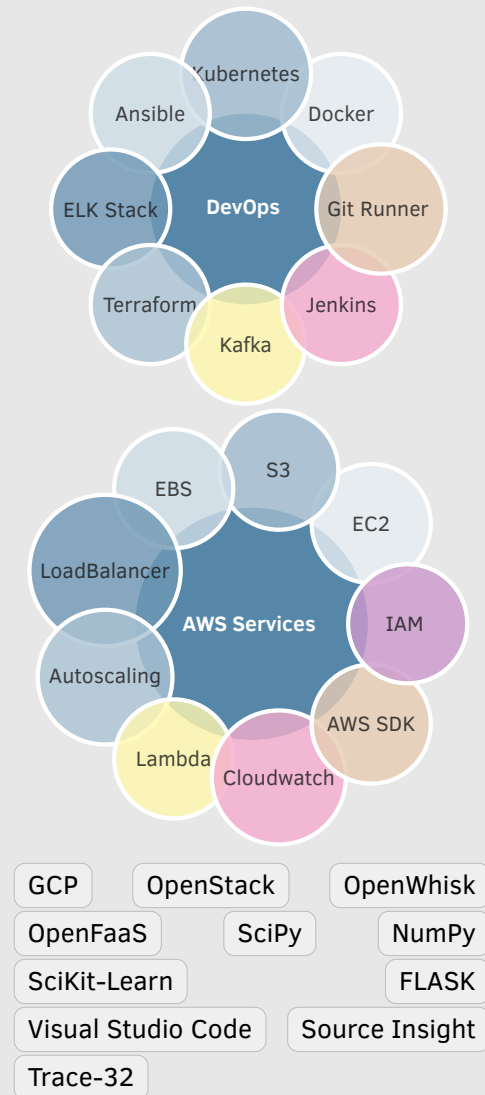
Awards

- 2021 – 2022** Grant of €100,000 in Software Campus program. BMBF, Germany
- 2019 – 2020** Twice received research credits worth €5000 Google Cloud, Germany
- 2017** Outstanding paper award IEEE SC2 conference, Japan
- 2015** Employee of the Month award Samsung Semiconductor, India
- 2014** Spot award Samsung Semiconductor, India
- 2009** Award for scoring 100% points National Mathematics Olympiad, India
- 2008** Certificate of Merit for being among top 0.1% students in India Mathematics, High School, India

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Skills



Social Network



Extra-Curricular Activities

System administrator	System administrator for the chair of Computer Architecture and parallel systems at TU München, where I manage the chair's network, servers, and virtual machines.
Student tutor	Student tutor for the Cloud Computing lecture at TUM in winter semester: 2017/18, 2019/20, 2020/21
Job coordinator	Served as coordinator for managing the jobs recruitment drive of the Computer Science and Engineering Department at NIT Hamirpur, India.
Web coordinator	Served as web coordinator for NIMBUS 2014 (Annual Technical Fest NIT Hamirpur), where I was responsible for developing the technical fest website.
Team coordinator	Served as coordinator of Computer Science and Engineering Departmental team for NIMBUS 2013 (Annual Technical Fest NIT Hamirpur)

Publications

Patents

2019	System and method of orchestrating execution of commands in a non-volatile memory express (NVMe) device <i>Singh, Vikram, Anshul Jindal, Saurabh Pradeep Bondarde, and Aishwarya Ravichandran</i> U.S. Patent 10,372,376
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Journals

2022	TppFaaS: Modeling Serverless Functions Invocations via Temporal Point Processes <i>Markus Steinbach, Anshul Jindal, Mohak Chadha, Michael Gerndt, Shajulin Benedict.</i> IEEE Access Journal
2021	Function Delivery Network: Extending Serverless Computing for Heterogeneous Platforms <i>Anshul Jindal, Michael Gerndt, Mohak Chadha, Vladimir Podolskiy and Pengfei Chen</i> Software: Practice and Experience
2019	Multilayered autoscaling performance evaluation: Can virtual machines and containers co-scale? <i>Vladimir Podolskiy, Anshul Jindal, Michael Gerndt.</i> International journal of applied mathematics and computer science 29, no. 2 (AMCS)

Workshops

CloudAM'21	Estimating the Capacities of Function-as-a-Service Functions <i>Anshul Jindal, Mohak Chadha, Shajulin Benedict and Michael Gerndt.</i> CloudAM '21: IEEE/ACM 10th Workshop on Cloud and Edge Computing, and Applications Management
AIOps'21	IAD: Indirect Anomalous VMMs Detection in the Cloud <i>Anshul Jindal, I. Shakhat, Jorge Cardoso, M. Gerndt, V. Podolskiy.</i> AIOps workshop, the companion of the 19th International Conference on Service Oriented Computing, ICSOC 2021, Dubai
AIOps'20	Online Memory Leak Detection in the Cloud-based Infrastructures <i>Anshul Jindal, Paul Staab, Jorge Cardoso, M. Gerndt, V. Podolskiy.</i> In AIOps workshop, the companion of the 18th International Conference on Service Oriented Computing, ICSOC 2020, Dubai.
WoSC'20	Towards Federated Learning Using FaaS Fabric <i>Mohak Chadha, Anshul Jindal, and Michael Gerndt</i> Proceedings of the 6th ACM International Workshop on Serverless Computing, WoSC@Middleware 2020 ACM.
HotCloudP'18	Autoscaling Performance Measurement Tool <i>Anshul Jindal, Vladimir Podolskiy, and Michael Gerndt</i> In Companion of the 2018 ACM/SPEC International Conference on Performance Engineering (ICPE '18). ACM, New York, NY, USA

Conferences

- BigData'22 **FedLess: Secure and Scalable Federated Learning using Serverless Computing**
Andreas Grafberger, Mohak Chadha, Anshul Jindal, Jianfeng Gu, and Michael Gerndt.
In IEEE Conference on BigData
- UCC'21 **Courier: Delivering Serverless Functions Within Heterogeneous FaaS Deployments**
Anshul Jindal, Frielinghaus Julian, Mohak Chadha, Michael Gerndt.
IEEE/ACM 14th Conference on Utility and Cloud Computing (UCC)
- IC2E'21 **DeepEdgeBench: Benchmarking Deep Neural Networks on Edge**
Stephan Baller, Anshul Jindal, Mohak Chadha, Michael Gerndt.
IEEE International Conference on Cloud Engineering (IC2E), 2021
- CLOSER'20 **Microservices vs Serverless: A Performance Comparison on a Cloud-native Web Application**
Chen-Fu Fan, Anshul Jindal and Michael Gerndt
In Proceedings of the 10th International Conference on Cloud Computing and Services Science - Volume 1: CLOSER
- CLOSER'20 **Performance Evaluation of Container Runtimes.**
Lennart Espe, Anshul Jindal, Vladimir Podolskiy and Michael Gerndt.
In Proceedings of the 10th International Conference on Cloud Computing and Services Science - Volume 1: CLOSER
- PDP'20 **Windsurfing with APPA: Automating Computational Fluid Dynamics Simulations of Wind Flow using Cloud Computing**
Anshul Jindal, B. Strahm, V. Podolskiy and M. Gerndt
28th Euromicro International Conference on Parallel, Distributed and Network-Based Processing (PDP), Västerås, Sweden,
- ICITIIT'20 **Scalable Infrastructure and Workflow for Anomaly Detection in an Automotive Industry**
Anshul Jindal, M. Gerndt, M. Bauch and H. Haddouti
International Conference on Innovative Trends in Information Technology (ICITIIT), Kottayam, India
- ICPE'19 **Performance Modeling for Cloud Microservice Applications**
Anshul Jindal, V. Podolskiy, M. Gerndt
Proceedings of the 2019 ACM/SPEC International Conference on Performance Engineering, Mumbai, India,
- SASO'18 **Forecasting Models for Self-Adaptive Cloud Applications: A Comparative Study**
V. Podolskiy, Anshul Jindal, M. Gerndt and Y. Oleynik
IEEE 12th International Conference on Self-Adaptive and Self-Organizing Systems (SASO), Trento, Italy
- CLOUD'18 **IaaS Reactive Autoscaling Performance Challenges**
V. Podolskiy, Anshul Jindal and M. Gerndt
11th International Conference on Cloud Computing, San Francisco
- SC2'17 **Multilayered Cloud Applications Autoscaling Performance Esti.**
Anshul Jindal, V. Podolskiy and M. Gerndt
7th International Symposium on Cloud and Service Computing, Kanazawa,

Posters

- ICDCS'21 **Function Delivery Network: Extending Serverless Computing for Heterogeneous Computing**
Anshul Jindal, Mohak Chadha, Michael Gerndt, Julian Frielinghaus, Vladimir Podolskiy, Pengfei Chen.
In Proceedings of the 41st International Conference on Distributed Computing Systems (ICDCS). IEEE
- EuroSys'19 **SCALENDAR: Predictive Autoscaling Engine for Microservice Applications in Cloud**
Vladimir Podolskiy, Anshul Jindal, Yesika Ramirez, Atakan Yenel, Saifeldin Ahmed and Michael Gerndt
14th European Conference on Computer Systems (EuroSys 2019)