A L A N
NAIR

INFO

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Website   alannair.github.io

ABOUT ME

I landed in systems research after stumbling around various fields including software development, data science, and algorithmic trading while slowly realizing that my aptitude and natural interests align with computer systems. In particular, I love (and am experienced in) OS (esp. kernel hacking), Cloud Computing and Computer Architecture.

EXPERIENCE

RESEARCH INTERN   Sep 2022 - Dec 2022

Intel Labs | Bengaluru, India

- Successfully scaled Data Access Monitoring to terabyte-scale workloads
- Incorporated page table based profiling schemes to DAMON in the Linux kernel
- Evaluated performance gains on terabyte-scale memory workloads

RESEARCH INTERN   May 2021 - Jan 2022

Intel Labs | Bengaluru, India (Remote)

- Built far memory support for serverless / FAAS environments using Linux kernel tools
- Integrated the far memory with the page fault handler
- Evaluated performance on standardized workloads
- Patented by Intel

TUTOR AND TEACHING ASSISTANT   Aug 2020 - Apr 2022

IIT Kanpur & The University of Edinburgh

- **IIT Kanpur**:*Fundamentals of Computing* Tutor. Tutored for two fresher undergrad batches over two semesters in 2020-21. Conducted weekly tutorials for programming in C, designed problems for labs and set questions for quizzes.
- **IIT Kanpur**:*Operating Systems* TA. Designed assignments, graded quizzes and resolved doubts for junior undergrads in 2021-22 Fall.
- **IIT Kanpur**:*Compilers* TA. Designed assignments, graded quizzes and resolved doubts for junior undergrads in 2021-22 Spring.
- **The University of Edinburgh**:*Operating Systems* Tutor. Tutoring for two junior undergrad batches. Conducting weekly tutorials.

QUANTITATIVE STRATEGIST INTERN   May 2020 - Jun 2020

Quadeye Securities LLC | *Gurugram, India (Remote)*

• Analysed real stock-price data and designed trading strategies

DATA SCIENCE / SOFTWARE DEVELOPMENT INTERN   May 2019 - Jul 2019

Monet Analytics | *Gurugram, India*

• Eye-Tracking and Detection over a webcam feed for a website
• Sentiment Analysis on tweets and user comments

PUBLICATIONS

Research Papers
Nair, Alan, Sandeep Kumar, Aravinda Prasad, Ying Huang, Andy Rudoff, and Sreenivas Subramoney (July 2024). "Telescope: Telemetry for Gargantuan Memory Footprint Applications". In: *2024 USENIX Annual Technical Conference (USENIX ATC 24)*. Santa Clara, CA: USENIX Association, pp. 17–33. ISBN: 978-1-939133-35-9. URL: https://www.usenix.org/conference/atc24/presentation/nair.

Articles
N. Alan, Sandeep Kumar, and Aravinda Prasad (2024). "Telescope: Profiling Memory Access Patterns at the Terabyte-scale". In: *Usenix ;LOGIN;* URL: https://www.usenix.org/publications/loginonline/telescope-profiling-memory-access-patterns-terabyte-scale.

EDUCATION

Ph.D   2023-

Dept. of Informatics, University of Edinburgh | *Edinburgh, Scotland*

• Supervised by *Dr. Antonio Barbalace* and *Dr. Boris Grot*

B.Tech + M.Tech (Dual Degree)   2017-2022

Dept. of CSE, IIT Kanpur | *Kanpur, India*

• CGPA: 8.7 / 10.0
• Masters Thesis: "Speeding Up Inference on CNNs for CPUs" was supervised by *Dr. Swarnendu Biswas* and done in collaboration with *Dr. Sasikanth Avancha* and *Dr. Kavitha Madhu* from *Intel Labs, Bengaluru*

ACHIEVEMENTS

Rankings
• All India Rank **189** in *JEE Advanced 2017*
• All India Rank **1067** in *JEE Mains 2017*

SERVICE

Artifact Evaluation Committee
• ACM/IEEE MICRO 2023