

# Aayush Kumar

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## Employment History

- 2024 – Present     📌 **Research Fellow**, PROSE team, Microsoft, India.
- 2023     📌 **Quantitative Research Intern**, Quadeye Securities LLP, India.

## Education

- 2020 – 2024     📌 **B.Tech., IIT Kanpur, India** Computer Science and Engineering.  
Cumulative Grade Point Average: 9.83/10
- 2023     📌 **Semester Exchange, EPFL, Switzerland** Computer Science.  
Cumulative Grade Point Average: 5.4/6
- 2017 – 2020     📌 **High School, NPS HSR, Bangalore, India.**  
*Central Board of Secondary Education (CBSE) curriculum, studying the sciences with computer science.*

## Publications

### Pre-prints


- 1     **A. Kumar**, D. Prol, A. Alipour, and S. S. Ragavan, *To Google or To ChatGPT? A Comparison of CS2 Students' Information Gathering Approaches and Outcomes*, 2025. arXiv: 2501.11935 [cs.HC]. 🔗 URL: <https://arxiv.org/abs/2501.11935>.
- 2     J. T. Liang, **A. Kumar**, Y. Bajpai, S. Gulwani, V. Le, C. Parnin, A. Radhakrishna, A. Tiwari, E. Murphy-Hill, and G. Soares, *TableTalk: Scaffolding Spreadsheet Development with a Language Agent*, 2025. arXiv: 2502.09787 [cs.SE]. 🔗 URL: <https://arxiv.org/abs/2502.09787>.
- 3     **A. Kumar**, Y. Bajpai, S. Gulwani, G. Soares, and E. Murphy-Hill, *How Developers Use AI Agents: When They Work, When They Don't, and Why*, 2025. arXiv: 2506.12347 [cs.SE]. 🔗 URL: <https://arxiv.org/abs/2506.12347>.

### Conference Papers







- 1     H. Goel, **A. Kumar**, and S. S. Ragavan, "End-user programming is weird: How, why and what to do about it," in *2023 IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC)*, 2023, pp. 41–50. 🔗 DOI: 10.1109/VL-HCC57772.2023.00013.
- 2     M. Amoozadeh, D. Daniels, D. Nam, **A. Kumar**, S. Chen, M. Hilton, S. Srinivasa Ragavan, and M. A. Alipour, "Trust in generative ai among students: An exploratory study," in *Proceedings of the 55th ACM Technical Symposium on Computer Science Education V. 1*, ser. SIGCSE 2024, Portland, OR, USA: Association for Computing Machinery, 2024, pp. 67–73, ISBN: 9798400704239. 🔗 DOI: 10.1145/3626252.3630842.

### Conference Posters





- 1     M. Amoozadeh, D. Daniels, S. Chen, D. Nam, **A. Kumar**, M. Hilton, M. A. Alipour, and S. S. Ragavan, "Towards characterizing trust in generative artificial intelligence among students," in *Proceedings of the 2023 ACM Conference on International Computing Education Research - Volume 2*, ser. ICER '23, Chicago, IL, USA: Association for Computing Machinery, 2023, pp. 3–4, ISBN: 9781450399753. 🔗 DOI: 10.1145/3568812.3603469.

- 2 H. Goel, **A. Kumar**, and S. S. Ragavan, "Poster: End-user programming is weird," in *2023 IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC)*, 2023, pp. 274–275.  DOI: 10.1109/VL-HCC57772.2023.00051.

## Selected Projects

- 1 **Intersectionality in Oversampling on Social Attributes**, Semester Project, ML4ED Lab, EPFL, 2023, Built on the paper by Cock et al. to analyze the impact of intersectionality on different oversampling strategies for a behavioural predictive model in education.
- 2 **SoulFull: A Companion App for Binge Eating**, Course Project, EPFL, 2023, Designed a high-fidelity prototype for an app that supports people struggling with binge eating by applying fundamental interaction design principles.  URL: <https://www.figma.com/file/OLqV3BIDvyHij9iheE4esL/>.
- 3 **CoOpt: Comparing Optimisers**, Course Project, IIT Kanpur, 2023, Co-wrote a research paper that compared different ML optimisers on image classification and regression tasks.  URL: <https://github.com/Aeyush10/CoOptPaper>.
- 4 **A Whole New World: Infinite Procedurally Generated Terrain**, Course Project, EPFL, 2023, Designed and created a procedurally generated visualisation of infinitely extending mountainous terrain with dynamic camera movements.  URL: [https://github.com/Aeyush10/CS341\\_Graphics\\_Project](https://github.com/Aeyush10/CS341_Graphics_Project).
- 5 **DigiCampus**, Course Project, IIT Kanpur, 2022, Worked with a team to create a web application to simplify entry-exit logistics for students and faculty across college campus.  URL: <https://github.com/ananya704/CS253>.
- 6 **Parallel Optimised View Synthesis**, Course Project, EPFL, 2023, Researched and applied zero-order methods to locally maximise entropy of 2D images (visualisations) of a 3D dataset. Developed ideas, wrote code, and created a presentation for methods to efficiently parallelise the visualisations.  URL: <https://github.com/PrateekSogra/CS677-Parallel-optimised-View-Synthesis>.
- 7 **Bandersnatch: A C++ CUI Game**, Self Project, EPFL, 2021, An interactive game made in C++ with a narrative that branches out based on user performance in implemented mini-games.  URL: [https://github.com/Aeyush10/Bandersnatch\\_for\\_fun](https://github.com/Aeyush10/Bandersnatch_for_fun).

## Skills

Programming	 C/C++, Python, R, TypeScript, JavaScript, HTML, CSS, Ruby, TensorFlow, WebGL (GLSL), Java.
Empirical Studies	 Experiment Design, Survey Design, Qualitative Coding, Study Conduction, Mixed Methods Data Analysis
Utilities	 Jupyter/Google Colab, MySQL, Qualtrics, Git, Bash, LaTeX.
Design Tools	 Figma, Canva, Bootstrap, iMovie.


## Miscellaneous Experience

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### Awards and Achievements

- 2024          **Research Proficiency Medal** IIT Kanpur, India.  
*Awarded for best undergraduate research project by a graduating student in the Computer Science and Engineering department.*
- 2022          **Academic Excellence Award** IIT Kanpur, India.
- 2021          **Dr. Prateek Mishra Memorial Scholarship Awardee**, IIT Kanpur, India.  
     **Academic Excellence Award** IIT Kanpur, India.
- 2020          **All India Rank 976**, Joint Entrance Examination - Advanced, India.  
     **All India Rank 4128**, Joint Entrance Examination - Mains, India.

### Teaching Experience

- Fall 2023          **Tutor, ESC111: Fundamentals of Computing**, CSE Department, IIT Kanpur, India.
- Fall 2022          **Volunteer**, Prayas (Student-run Community Service Organisation), IIT Kanpur, India.

### Extracurriculars

- 2022 – 2023          **Video Team Head**, Vox Populi (Student Journalism Body), IIT Kanpur, India.
- 2021 – 2022          **Secretary**, English Literary Society, IIT Kanpur, India.  
     **Secretary**, Film Club, IIT Kanpur, India.