

Eklavya Sharma

<https://sharmaeklavya2.github.io>
eklavyas@iisc.ac.in | ekurgn@gmail.com | +91 8700909718

INTERESTS

- Algorithms
- Approximation algorithms
- Online algorithms

EDUCATION

IISC BANGALORE ↗

M.TECH. (RESEARCH) IN CS
July 2019 – Present
Bangalore, India
GPA: 9.7 / 10.0

BITS PILANI ↗

BE IN COMPUTER SCIENCE
August 2014 – June 2018
Pilani, Rajasthan, India
GPA: 9.14 / 10.00

LINKS

Github: [sharmaeklavya2](https://github.com/sharmaeklavya2) ↗
LinkedIn: [sharmaeklavya2](https://www.linkedin.com/in/sharmaeklavya2) ↗
Codeforces: [eku](https://codeforces.com/profile/eku) ↗
ICPCID: [5CN1FMJ0JIDP](https://icpcid.com/5CN1FMJ0JIDP) ↗

SKILLS

LaTeX, Python, C/C++, Java, Bash, HTML, CSS, JavaScript.

COURSEWORK

IISC BANGALORE

Approximation Algorithms,
Design and Analysis of Algorithms,
Computational Methods of Optimization,
Cryptography

ACHIEVEMENTS

BITS-Pilani Merit Scholarship
(GPA within top 2% in three semesters)
GATE India rank 86

ACM-ICPC regional ranks:

- Amritapuri 2017: 29/250.
- Amritapuri 2016: 66/450.
- Kharagpur 2016: 30/70.
- Amritapuri 2015: 88/250.

PROJECTS

ALGORITHMS FOR PACKING PROBLEMS ↗

Jan 2020 – Present
Supervisor: Prof. Arindam Khan, IISc Bangalore.

- Designed algorithms for geometric bin packing and its variants.
- Worked on the online knapsack problem in the random-order model.

MITIGATING DNS-BASED DOS ATTACKS ↗

Sept 2017 – Dec 2017
Supervisor: Prof. Vishal Gupta, BITS Pilani.

- Devised a mechanism for mitigating DNS amplification attacks.
- Presented this work at ICACCI in Sept 2018.

PAPERS

- Tight approximation algorithms for geometric bin packing with skewed items (with Arindam Khan). [arXiv:2105.02827](https://arxiv.org/abs/2105.02827).
- Harmonic algorithms for packing d -dimensional cuboids into bins. [arXiv:2011.10963](https://arxiv.org/abs/2011.10963).
- Geometry meets vectors: approximation algorithms for multidimensional packing (with Arindam Khan and KVN Sreenivas, unpublished).
- Approximation algorithms for generalized multidimensional knapsack (with Arindam Khan and KVN Sreenivas). [arXiv:2102.05854](https://arxiv.org/abs/2102.05854).
- An approximation algorithm for covering linear programs and its application to bin-packing. [arXiv:2011.11268](https://arxiv.org/abs/2011.11268).
- Analysis of the harmonic function used in bin-packing. [arXiv:2011.11618](https://arxiv.org/abs/2011.11618).
- Mitigating DNS amplification attacks using a set of geographically distributed SDN routers. In ICACCI-2018, Bangalore (with Vishal Gupta). [doi:10.1109/ICACCI.2018.8554459](https://doi.org/10.1109/ICACCI.2018.8554459).

WORK EXPERIENCE

CSA, IISC BANGALORE | TEACHING ASSISTANT

October 2020 – Jan 2021

Teaching assistant for the course ‘Design and Analysis of Algorithms’.

MEDIA.NET | PLATFORM ENGINEER

August 2018 – July 2019 | Bangalore, India

Worked on media.net’s real-time bidder for online advertisement.

AMERICAN EXPRESS | INTERN ↗

Jan 2018 – June 2018 | Gurgaon, India

Trained a neural network to predict credit-card defaulting. The data was oddly-structured, so a custom architecture was devised. Its performance was at par with the production model, which was tuned over many years.

DIRECTI | INTERN

May 2017 – July 2017 | Mumbai, India

Made Directi’s news article classification algorithm recognize more categories.

ZULIP | GOOGLE SUMMER OF CODE STUDENT ↗

May 2016 – Aug 2016

Ported Zulip’s code to Python 3 + mypy.