SOHAM DASGUPTA

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Education

Caltech   **September 2022 – May 2026**
B.S. Computer Science & Business Finance   *Pasadena, California*
- **Coursework:** Data Structures, Algorithms, Theory of Computation, Programming Systems, Discrete Mathematics, Multivariable Calculus, Linear Algebra, Real Analysis, Complex Analysis, Object Oriented Design

Mallya Aditi International School   **September 2020 – March 2022**
A Level Diploma; GPA: 4.30/4.00   *Bangalore, India*
- **Coursework:** Computer Science, Pure Mathematics, Statistics, Physics, Chemistry, AP Calculus BC, AP Physics C: Mechanics, AP Computer Science, AP Statistics, Global Perspectives & Research, English

Experience

IBM Research Lab   **May 2021 – February 2022**
Software Developer   *New Delhi, India*
- Worked with EmancipAction - a foundation in Mumbai, India, that homes victims of human trafficking.
- Contributed towards building an AI-assisted framework, powered by IBM Watson, that allows young girls to converse with a mental health chatbot in Hindi, English and Kannada. Also set up a hotline for emergency assistance.

MIT PathCheck Foundation   **November 2020 – May 2022**
Researcher   *Remote*
- Finalists at *MIT Solve competition, DrivenData's Temporal privacy Data Science Challenge*, and *Xprize Pandemic Response Challenge*.
- Led research team of 20 to co-author paper on comparing vaccination passports and credentials issued by different countries during COVID-19. Paper under review with the *Journal of Medical Internet Research.*

Publications

[1] **Dasgupta, Soham**, A. Jayagopal, A. L. Jun Hong, R. Mariappan, and V. Rajan, "Adverse drug event prediction using noisy literature-derived knowledge graphs: Algorithm development and validation," *JMIR Med Inform*, vol. 9, p. e32730, Oct 2021.

[2] R. Mukherjee, **Dasgupta, Soham**, A. Naik, S. Poddar, and N. Ganguly, "Understanding the role of affect dimensions in detecting emotions from tweets: A multi-task approach," in *Proceedings of the 44th International ACM SIGIR Conference on Research and Development in Information Retrieval*, SIGIR '21, (New York, NY, USA), p. 2303–2307, Association for Computing Machinery, 2021.

[3] **Soham Dasgupta**, A. Piplai, P. Ranade, and A. Joshi, "Cybersecurity knowledge graph improvement with graph neural networks," in *2021 IEEE International Conference on Big Data (Big Data), Orlando, FL, USA, December 15-18, 2021* (Y. Chen, H. Ludwig, Y. Tu, U. M. Fayyad, X. Zhu, X. Hu, S. Byna, X. Liu, J. Zhang, S. Pan, V. Papalexakis, J. Wang, A. Cuzzocrea, and C. Ordonez, eds.), pp. 3290–3297, IEEE, 2021.

[4] **Soham Dasgupta**, A. Piplai, A. Kotal, and A. Joshi, "A Comparative Study of Deep Learning based Named Entity Recognition Algorithms for Cybersecurity," in *IEEE International Conference on Big Data 2020*, IEEE, December 2020.

[5] **Soham Dasgupta** and S. Alfeld, "Learning predictive models of entity-threat relationships in cybersecurity from distributed representations of knowledge graphs," in *Pioneer Research Journal(Nominated)*, Pioneer Academics, August 2021.

[6] **Soham Dasgupta** and S. Turban, "The role of a mask - understanding the performance of deep neural networks to detect, segment, and extract cellular nuclei from microscopy images," *Journal of Emerging Investigators*, 2021.

Awards and Technical Skills

Languages: Python, Java, C++, HTML/CSS, JavaScript, SQL, LaTeX
Technologies/Frameworks: Flask, Apollo, Django, Websockets, Git, MongoDB, MySQL
Awards: USA Computing Olympiad (USACO) Gold Division; Euclid, Fermat and Hypatia Mathematics Contests Top 5%; Young Entrepreneur of the Year(2021); International Finalist – Genius Olympiad, Rochester Institute of Technology, USA.