Amit Vikram **Singh**

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Github https://github.com/AmitVSingh (Arctic Code Vault contributor)
Personal website https://amitvsingh.netlify.app/

Summary

- Professional experience of 3 years working in development and engineering sector at ASML. Worked as generalist (Industrialization engineer; 2 years) and specialist (Design engineer; 1 year)
- Strong educational background in Computational Optics with PhD in Physics.
- Generalist: Took care of new product introduction EXE:5000, NXE:3800E by providing servicibility and relaibility industrialisation during the product life cycle.
- Specialist: Experienced with optical module level complex problem analysis, validating specifications and factory and field escalations.

Work experience

Design/optical engineer at ASML Netherlands   04/2024 – Present

- Test analysis report for optics module of Lithographic scanner, which helped higher management to make critical decision on volume-up production of a new product NXE:3800E. **Tool:** Matlab.
- Derisking lens optimization algorithm and impact analysis on algorithm performance. **Tool:** Matlab.
- Strong communication and stakeholder engagement with engineering, factory, and customer support.

Industrialization engineer at ASML Netherlands   11/2022 – 03/2024

- Proactive and reactive access and drive availability (minimize downtime) improvements by troubleshooting and resolving the issue independently and collaborate with functional clusters to agree on the solution.
- Facilitated workshops, trainings, and knowledge transfer sessions on creating and improving the serviceability for internal customers (functional clusters).
- Internships: EUV Factory internship to learn the equipment performance logs, release for volume strategies, way of working to mitigate the communication roadblocks faced in cross-sector escalations.

Previous projects and publications

- **Research project:** Ph.D. thesis: 'spatiotemporal evolution of non-diffracting plasmonic pulses.' Firstauthor publications: 1. DOI: https://doi.org/10.1364/OSAC.392840 (OSA Continuum), 2. DOI:https://doi.org/10.1364/OE.439764 (Optics Express). **Team:** 7 people with multidisciplinary and multinational backgrounds. **Tools:** Lumerical, MEEP, JCMWave, Matlab und PovRay. **Numerical methods:** FDTD, FEM und BPM. **Project duration:** 6 years.

Computational Skills and technical proficiency

- Matlab: data analysis & visualization, and numerical computing.
- Proficiency in plasmonic design and simulation using Lumerical FDTD Solutions, JCMwave (Finite Element Method), and MEEP FDTD solver (using Scheme interface).
- Strong proficiency in Teams, Outlook, Word, Excel, and Powerpoint.
- Machine learning: Python, R. All the relevant projects can be found on my GitHub repository .

Education

Ph.D. in **Physics/Optics** at Friedrich Schiller University Jena, Germany.   **10/2014 – 01/2022**

Master of Technology in **Applied Optics** at Indian Institute of Technology Delhi, India & University of

Stuttgart, Germany.   **07/2011 – 05/2013**

• Holography, Lasers, Optical instruments and Metrology, Aspheric Optics.

• DAAD exchange student.

Bachelor and Master of Science in Physics (Major) at the University of Allahabad, India. **07/2006 – 05/2009**

Trainings and certificates

Soft-skill trainings   **09/2023 – 03/2024**

- Effective communication, high performing team, and Faet5 (personality assessment) trainings.
- Can-do mindset with strong communication skills across teams and within different sectors.

Professional Data Science Certificates in Python from IBM and R from Harvard University

08/2018 – 03/2019

- Capstone project 1: NYC housing complaints problem and its business-oriented solution. The project solutions located the problem area and predicated the resources needed in the future.
- Capstone project 2: movie recommendation system based on the algorithm of BellKor's team (Netflix prize competition). Applied the algorithm to find out and fix reviewer's biases in a new data set.

Lab Works and Hands-on Experience

- Master thesis Project: Displacement measurement using core structures of phase singularity with sub-pixel accuracy. Skills developed: hands-on experience to optical metrology methods.
- Research project: Designed and measured group velocity dispersion of optical component (mirror) using white light interferometry set up. Skills developed: use of LabView in automation, Matlab for data processing.
- Research project: Developed and implemented a cost-effective in-house source set-up for the spectral characterization of photonics structures with a fiber-based spectroscope.

Languages

- Hindi – Mother tongue
- English – C2
- German – B1

Honours, awards and Memberships

- GitHub Arctic Code Vault contributor badge (2019).
- Deutscher Akademischer Austauschdienst (DAAD) scholarship to pursue research in Germany (awarded in 2014).
- Deutscher Akademischer Austauschdienst (DAAD) scholarship under IIT sandwich model to carry out master thesis at University of Stuttgart, Germany (awarded in 2012).
- CSIR-NET, National eligibility for lectureship at Indian Universities, approved by Council of Scientific and Industrial Research India (awarded in 2011).

Place: Eindhoven, The Netherlands   **Amit Vikram Singh**
Date: 23/05/2025