Sumeet Rohilla

Design Engineer
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PROFESSIONAL EXPERIENCE

- **ASML, Veldhoven, Netherlands** *[March 2020 - present]*
  Design Engineer, Metrology Solutions: Key responsibilities within ASML Technology Program are: Design and development of in-device metrology solutions, product generation process for advanced semiconductor technology and integration for high volume manufacturing, stakeholder in multi-disciplinary metrology projects for accuracy improvements. Additionally, worked on automation of optimized sampling algorithm deployed at customer site aiding in higher accuracy with limited time budget (Patent pending).

- **Taiwan Semiconductor Manufacturing Company (TSMC), Tainan, Taiwan** *[Aug 2015 - Dec 2016]*
  Process Integration Engineer, Fab14a: Responsible for production enhancement of various semiconductor products such as 0.18 μm Bipolar-CMOS-DMOS (BCD) and 0.11 μm High Voltage (HV). Worked on optical defect characterization, layout/process tuning and statistical analysis for yield improvement by root cause/process weakness identification. Developed data analysis methods for single wafer low yield analysis and reduction methods.

ACADEMIC DETAILS

- **Doctor of Philosophy (Ph.D.)** ***Marie-Curie Fellow*** *[Jan, 2017 - March, 2021]*
  [ESR 15, BITMAP[1] Project, H2020 MSCA Innovative Training Network]
  Specialization: Interdisciplinary (Applied Optics & Advance Image Processing)
  Department: Internal Medicine/Infectiology and Respiratory Diseases
  University: Charité - Universitätsmedizin Berlin
  Thesis: Novel biomedical applcations for spectrally resolved fluorescence lifetime imaging microscopy

- **Master of Technology (M.Tech.)** *[2013-15]*
  Specialization: Applied Optics **Grades: 8.85/10**
  Department: Physics
  Institute: Indian Institute of Technology, Delhi, India
  Thesis: Laser speckle contrast imaging and fluorescence spectroscopy

- **Master of Science (M.Sc.)** *[2011-13]*
  Specialization: Physics **Grades: 7.067/10**
  Department: Physics
  Institute: Indian Institute of Technology, Delhi, India
  Thesis: Mass transport models and their applications

- **Bachelor of Science (B.Sc.)** *[2007-10]*
  Department: Physics **Grades: 65.6%**
  University: Sri Venkateswara College, University of Delhi, India

TECHNICAL SKILLS

Programming[2] & Software	:	MATLAB, Python, LaTex, Origin, Microsoft Office, Adobe Indesign/Illustrator/Photoshop
Data Analysis & Statistical Modeling	:	Non-negative matrix factorization techniques, Principal component analysis, Deep Learning Specialization & Machine Learning (Online Course by Prof. Andrew Ng, Coursera), Monte Carlo methods, Image processing algorithms for Biomedical Physics
Applied Optics	:	Confocal fluorescence microscopy, Time-domain diffuse optics, Lasers & optical systems

[1] Brain Injury Trauma Monitoring using Advanced Photonics, www.bitmap-itn.eu/
[2] Github repository: www.github.com/SumeetRohilla

SUMMER SCHOOL, WORKSHOP & SCIENTIFIC COMMUNICATION

- "Mathematics of Deep Learning" Summer School, Berlin Mathematical School *[Aug, 2019]*
- "From an idea to Product launch", Hands-on workshop @ PicoQuant GmbH, Berlin *[Mar, 2019]*
- "PhD Master Class", ASML, Netherlands *[Mar, 2018]*
- Conference talk @ European conference on biomedical optics 2019, Munich, Germany *[Jun, 2019]*
- Conference talk @ Focus on Microscopy 2019, London, UK *[Apr, 2019]*
- Conference talk @ SPIE BiOS, San Francisco, USA *[Jan, 2018]*
- Posters @ *[2017 - 2019]*
    - 24^{th} & 25^{th} Single Molecule Workshop (Berlin), EMBL (Heidelberg), MAF (Brussels), XVIII Symposium of neuro-critical patient (Barcelona)

PUBLICATIONS

- **Sumeet Rohilla**, Benedikt Kraemer, Felix Koberlin, Ingo Gregor, and Andreas Hocke. "Multi-target immunofluorescence using spectral FLIM-FRET for separation of undesirable antibody cross-labeling." Scientific Reports volume 10, Article number: 3820 (2020) DOI: 10.1038/s41598-020-60877-8
- Anurag Behera, Laura Di Sieno, **Sumeet Rohilla**, Antonio Pifferi, Alessandro Torricelli, Davide Contini, Benedikt Kraemer, Felix Koberling, and Alberto Dalla Mora. "Large area SiPM and high throughput timing electronics: toward new generation time-domain instrument." In: SPIE Proceedings Volume 11074, Diffuse Optical Spectroscopy and Imaging VII; 1107402 (2019). DOI: 10.1117/12.2526792
- Michael Wahl, Tino Roehlicke, Sebastian Kulisch, **Sumeet Rohilla**, Benedikt Kraemer, and Andreas Hocke. "Photon arrival time tagger with many input channels, sub-nanosecond deadtime, very high throughput, and fiber optic remote synchronization." *Submitted in: Review of Scientific Instruments (RSI)*
- Mariano G. Pisfil, **Sumeet Rohilla**, Marcelle Konig, Benedikt Kraemer, Matthias Patting, Felix Koberling, and Rainer Erdmann. "Triple Colour STED Nanoscopy: Sampling Absorption Spectra Differences for Efficient Linear Species Unmixing." *Submitted in: The Journal of Physical Chemistry*
- **Sumeet Rohilla**, Benedikt Kraemer and Andreas Hocke. "Multi-target imaging of highly auto-fluorescent human lung tissues samples." *Submitted in: Scientific Reports, Nature publishing group*

SCHOLASTIC ACHIEVEMENTS

- Secured **Marie-Curie Fellowship** within BITMAP project, an EU H2020 ITN initiative *[2017-19]*
- Ranked $\mathbf{3}^{rd}$ in M.Tech. Applied Optics *[2015]*

POSITIONS OF RESPONSIBILITY

- Creative Designer for BITMAP project media *[Aug, 2017 - June, 2019]*
- Patent Team Member (Process Integration Department, Fab 14A, TSMC) *[2016]*
- Graduate Teaching Assistant (TA), IIT Delhi, India *[2014 - 2015]*
- Batch Representative, M.Tech. Applied Optics, IIT Delhi, India *[2013-2015]*

ORGANISATIONAL SKILLS AND COMPETENCES

- Management volunteer:
    - 24^{th} & 25^{th} International Workshop on "Single Molecule Spectroscopy and Super-resolution Microscopy in the Life Sciences, Berlin"
    - 15^{th} European Short Course on "Principles and Applications of Time-resolved Fluorescence Spectroscopy"
    - 9^{th} International symposium on advanced science and technology in experimental mechanics, IIT Delhi, India
- IIT Delhi open day : Demonstrated free space Mach Zehnder Interferometer
- Team Leader : Successful completion of High Altitude Kanchenjunga Trek

- Volunteer work with an Hopes Alive foundation (NGO, India) to provide financial support for underprivileged kids with severe medical illness

LANGUAGES

- **Hindi & English** - Native proficiency

PERSONAL INTERESTS & HOBBIES

- Running (Finished Berlin 2019 Marathon, preparing for 2021 edition)
- Reading (Non-fiction)
- Photography & Graphics Design
- Football, Cricket and other outdoor games
- Travelling

PERSONAL DETAILS

- **Nationality**: INDIAN
- **Date of Birth**: Jun 25, 1990
- **Marital Status**: Single