Hazem **Mesilhy**

Computational Lithography



About me

Passionate engineer specializing in computational lithography, focusing on EUV mask absorber and reflective multilayer modeling. 5+ years of research experience. Skilled in diverse programming languages and disciplines. Committed to pushing technological boundaries and finding innovative solutions. Proven track record of exceeding project goals. Eager to contribute to groundbreaking advancements in lithography and beyond.

Skills

- · Numerical Optimization
- · Optics simulation / modeling
- · Machine Learning
- · Linux
- · Problem solving
- Teamwork

Programming

- Python
- · C++
- · HPC
- Java
- hazem-mesilhy hazemiii
- Hazemiii.github.io

EXPERIENCE

July 2024

Senior OPC Engineer

ERLANGEN · Germany ♥

Responsible for building computational lithography platform. Developing OPC strategies for curvilinear masks.



Research Scientist

ERLANGEN · Germany ?

Specialize in EUV lithography with a focus on mask/shadowing effects, EUV mask enhancement, absorber, and reflective multilayer modeling. Developed a reliable multilayer degradation model. Participated in European project management, student mentoring, customer presentations, and Dr.LiTHO maintenance.

2017-2019

Research Assistant

ERLANGEN · Germany ?

Engaged in first investigations into Hyper-NA EUV (NA of 0.75) feasibility study, while also providing vital support for EUV mask simulations and optimizations across diverse European projects. Participated in debugging, building, and generating installer packages for Dr.LiTHO to ensure smooth customer experiences.

June-Sept. 2015

Intern Programmer

JAIPUR · India 9

Focused on Android development, animation, and incorporating machine learning algorithms for efficient unused folder management. Participation in DevOps and the software development cycle. Customized Chromium and Mozilla browsers for Android using C under Linux environment. Implemented image quality enhancements and filters with OpenCV.



Fraunhofer

DEGREES

2019

2024 Ph.D.

FAU · Erlangen 🏦

FAU

Master of Science FAU · Erlangen 🟦

FAU

2016 **Bachelor**

> FACULTY OF ENGI-NEERING · Cairo uni





AREAS OF SPECIALIZATION Computational Lithography

- · OPC (Optical Proximity Correction)
- Modeling
- Programming
- · Machine learning

Awards

2021

Best Student Paper Award: 2021 SPIE Photomask Technology + EUV Lithography

LANGUAGES

Arabic English German

C2 mother tongue C2 Α2

PUBLICATIONS

More than 17 publications: Google Scholar

TALKS

- Various SPIE conferences and panels.
- 2022 ASML Technology Conference
- 2023 ASML Technology Conference