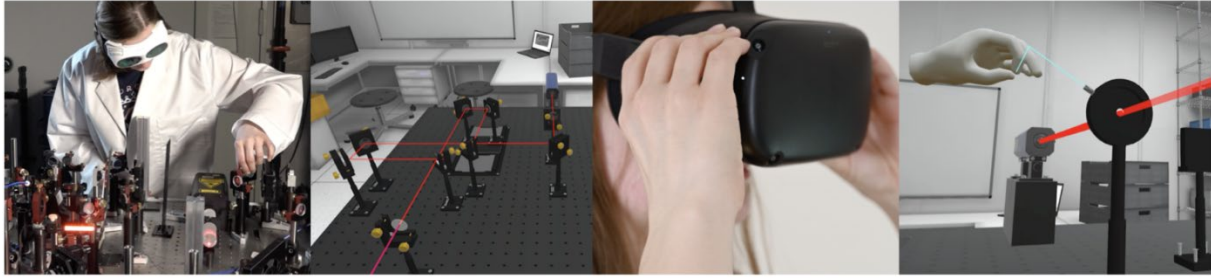




Student Worker, Intern or Thesis (f/m/d): femtoPro



femtoPro – Become a Femtosecond Laser Professional: An Immersive Training Simulation

The optics and photonics are a huge field with a lot of demand for current and future experts. However, it is challenging to efficiently raise laboratory safety awareness and teach the set-up process of complicated optical experiments. Immersive training simulations offer a novel approach, allowing eye-safe practice with automated tutorials and immediate feedback. We are developing an immersive, interactive simulation of a laser lab, with realistic physics of laser beams and ultrashort light pulses, in a collaboration between the Institut für Physikalische und Theoretische Chemie and the Institut für Informatik.

Simulating the physics behind optics – especially femto-pulse lasers – is computationally intensive and requires elaborate algorithms. Solving the simulation in interactive real time requires even more attention to performance and optimization. Replicating the challenges inherent to a real laboratory environment in virtual reality is non-trivial, as the limitations in the user input modalities need to be taken into account without compromising the training.

Our ambition therefore is to provide a unified experience, from the manual placement and parameterization of the individual optical elements to the configuration of a simulated suite of measurement applications on a virtual computer, that allows the user to focus on the actual task at hand – in an immersive real-time interactive application.

Find a trailer of the project online: <https://go.uniwue.de/femtopro>

Objectives

Contribute to one of the many aspects of the project:

- Design and implement state-of-the-art user interface elements for virtual reality.
- Improve upon our coherent visual language and consistent interaction methodology.
- Optimize and extend the Femto.Core Physics Library for real-time interactive laser physics.
- Extend the collaborative immersive online experience.

Your Profile

- Motivation to tackle interesting & challenging tasks.
- Curiosity & creativity.
- Interest in efficient coding, virtual reality, UX design, high-performance coding, project management...
- (Some) experience in C# and/or Unity.

What We offer

- Full time/part time position
 - as a student worker (paid) or
 - as intern (unpaid academic achievement) or
 - for your individual thesis/project work.
- Home office with flexible schedule.
- Agile development methods and a high degree of self-responsibility.

Contact

You can find additional material on <https://go.uniwue.de/femtopro>. You can reach us via Mail under femtopro@uni-wuerzburg.de or via phone under +49 931 31-80036.

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