



Research Intern - Modeling Complex Surgical Scenarios via Segmentation and 3D Printing

Brain Imaging Core Lab

NYU Abu Dhabi

The Brain Imaging Core Lab at New York University Abu Dhabi seeks to recruit an intern for the position of Modeling Complex Surgical Scenarios via Segmentation and 3D Printing. The successful applicant will assist in the development of realistic 3D models of brain anatomy and surgical scenarios, utilizing medical imaging data and 3D printing technologies. This project aims to enhance the understanding and planning of complex surgeries by providing surgeons with detailed, patient-specific models for preoperative planning and simulation.

Role and Responsibilities:

- **3D Image Segmentation:** Process medical imaging data (e.g., MRI, CT scans) to segment and visualize different brain structures relevant for complex surgical procedures.
- **3D Model Development:** Utilize segmentation data to create 3D models that accurately represent patient-specific brain anatomy, surgical sites, and surrounding structures.
- **3D Printing:** Convert the 3D models into physical prototypes using 3D printing technologies, enabling hands-on practice and training for surgeons.
- **Surgical Simulation:** Assist in developing virtual and physical simulations of surgeries to support medical professionals in preoperative planning.
- **Collaboration:** Work closely with neuroscientists, surgeons, and engineers to refine and improve the models and simulations based on feedback.
- **Research:** Contribute to ongoing research projects aimed at improving surgical outcomes through advanced modeling and simulation techniques.

The candidate will work in an interdisciplinary environment consisting of PhD-level scientists, graduate students, and medical professionals, offering exposure to cutting-edge research and technology in brain imaging, surgery, and 3D printing.

Applicants must have:

- A strong interest in neuroscience, medical imaging, and 3D printing technologies.
- Basic knowledge of medical imaging software (e.g., 3D Slicer, ITK-SNAP, or similar).
- Familiarity with 3D modeling tools (e.g., Blender, Meshmixer, or similar).
- Strong problem-solving skills and attention to detail.
- Excellent communication skills and the ability to work in a collaborative environment.
- Experience with programming (Python, MATLAB, or similar) is a plus but not required.

For consideration, applicants need to submit:

- A cover letter detailing their interest in the position.
- Curriculum Vitae (CV).
- A brief statement of research interest.
- Contact details for two references.

جامعة نيويورك أبوظبي



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All application documents should be submitted in PDF format. For inquiries, please email Dr. Osama Abdullah at: osama.abdullah@nyu.edu.

The internship opportunity is competitive. Applications will be accepted during the Spring and Fall terms. Shortlisted candidates will be notified within one month of the application deadline.

About NYU Abu Dhabi:

NYU Abu Dhabi is a degree-granting research university with a fully integrated liberal arts and science undergraduate program in the Arts, Sciences, Social Sciences, Humanities, and Engineering. NYU Abu Dhabi, NYU New York, and NYU Shanghai form the backbone of NYU's global network university, a system of interconnected campuses and academic centers across six continents. This global university provides transformative opportunities for students and faculty to engage in international academic and scholarly endeavors. As a major intellectual hub at the crossroads of the Arab world, NYU Abu Dhabi is committed to advancing knowledge through research, education, and creative activities.

EOE/AA/Minorities/Females/Vet/Disabled/Sexual Orientation/Gender Identity Employer

UAE Nationals are encouraged to apply.