



# YASH PATEL

**Master of Technology (MTech)  
Biomedical Engineer | Medical Physics Researcher**

**Address:** Sankt Gotthard Straße 1/27, 1140, Vienna, Austria

**E-Mail:** yash.patel.96@icloud.com

**LinkedIn:** linkedin.com/in/yash-patel65

**Telephone:** +43 681 101 70302

**Date of Birth:** 06.05.1996

## PROFESSIONAL SUMMARY

---

Biomedical engineer with six years of experience developing and deploying medical imaging systems in direct collaboration with clinicians, spanning hardware integration, software development, and quality assurance in accordance with ethical and medical device regulations. Currently a PhD candidate in Medical Physics at the Medical University of Vienna.

## WORK EXPERIENCE

---

- 02/2023 – Present: **Research Associate**  
*Center for Medical Physics and Biomedical Engineering, Medical University of Vienna, Vienna*
- Designed and built a retinal imaging microscope for animal studies, combining multimodal imaging to visualise disease bio-markers
  - Coordinated and implemented animal imaging studies in cooperation with the veterinary department at the Medical University of Vienna
  - Developed and validated automated image analysis software to measure blood flow in diseased retinas, including performance benchmarking and quality assurance
  - Developed a control software for a custom-built optical imaging system, introducing scanning modularity, which improved reliability and usability.
  - Trained junior PhD students on imaging techniques and guided colleagues through system setup and troubleshooting
- 02/2019 – 10/2022: **Junior Research Fellow**  
*Imaging Biomechanics and Mathematical Modelling Solutions (IBMS) Lab, Narayana Nethralaya Eye Hospital, Bangalore*
- Built a clinical optical imaging system prototype and developed software to control the hardware, acquire patient data, and display results in real time; system used to examine approximately 30 patients daily
  - Worked with ophthalmologists to translate clinical needs into imaging protocols and automated analysis tools adopted in daily patient care. Created automated image analysis pipelines for corneal diagnostics that remain in clinical use over three years later
  - Trained interns, ophthalmologists, optometrists, and clinical staff on clinical imaging systems and custom analysis workflows
- 07/2018 – 01/2019: **Research Intern**  
*IBMS lab, Narayana Nethralaya Eye Hospital, Bangalore*
- Developed software to automatically measure tissue thickness and characterise the shape of the eye using clinical imaging systems, enabling better diagnostic assessment
  - Designed a prototype for an artificial lens implant used in eye surgery, using optical design software

## LEADERSHIP & TEACHING EXPERIENCE

---

- 2024 – 2025: **President**  
*Young Scientist Association (YSA), Medical University of Vienna*
- Led multiple interdisciplinary academic and networking events fostering collaboration between research groups
  - Organised a symposium with over 500 participants and international invited speakers
- 2013 – 2019: **Tutoring during bachelor's and master's**
- Prepared teaching materials and conducted laboratory sessions for peers in biomedical engineering courses
  - Provided individual tutoring on technical subjects and supported fellow students with coursework and projects

## EDUCATION

---

- Since 02/2023: **PhD in Medical Physics**  
*Medical University of Vienna, Vienna*  
*Expected June 2026*  
*Dissertation: Method development for vascular and haemodynamic analysis of mouse retina using optical coherence tomography*  
*(Under guidance of Conrad Merkle, PhD)*
- 07/2017 – 05/2019: **Master of Technology (MTech) in Biomedical Engineering**  
*Vellore Institute of Technology, Vellore*  
*Cumulative Grade Point Average (CGPA): 8.49/10*  
*Thesis: Large diameter reconstruction of corneal curvature*  
*(Under guidance of Sivacoumar R, PhD)*
- 08/2013 – 06/2017: **Bachelor of Engineering (B.E.) in Biomedical Engineering**  
*Govt. Engineering College, Gandhinagar*  
*CGPA: 7.46/10*  
*Thesis: EEG event recognition and analysis*  
*(Under guidance of Prof. Piyush Patel)*

## COMPETENCIES

---

- Medical Imaging & Instrumentation** Optical coherence tomography (OCT) and polarisation-sensitive OCT (PS-OCT) systems; confocal and fluorescence microscopy; medical device prototyping to clinical deployment; optical systems design, alignment, calibration and quality assurance; beam conditioning, spectral filtering, ray tracing and optical modelling
- Programming** MATLAB, LabVIEW, Python; instrument control and data acquisition; image processing and segmentation pipelines; fundamentals of machine learning and deep learning; statistical analysis
- Clinical Collaboration** Clinical needs assessment and translation to technical requirements; medical device regulatory awareness (MDR); documentation and technology transfer
- Additional Training** DeepLearning.AI Specialization (Coursera, 2021–2022); Data Science & Machine Learning (MIT-IDSS, 2021)

## AWARDS AND CONFERENCES

---

- Student Travel Grant, SPIE Photonics West 2024, San Francisco, California, USA
- SPIE Photonics West 2024 and 2026, San Francisco, California, USA
- ARVO 2025, Salt Lake City, Utah, USA

## LANGUAGES

---

- English: Professional proficiency (working language throughout education and career)
- German: A2 (currently actively learning)
- Gujarati, Hindi: Native proficiency

## RESEARCH OUTPUT

---

Publications: 14 peer-reviewed (11 Q1, 3 Q2 journals) | 47 citations, h-index: 4

**Patel, Y.,** Baumann, B., & Merkle, C. (2026). Blood flow analysis of retinal neovascularisations in a VLDLR mouse model using contrast-enhanced optical coherence tomography. *Biomedical Optics Express*, 17(2), 991-1010.

Ladurner, G., Harper, D. J., May, L., Worm, S., **Patel, Y.**, Varaka, M., ... & Baumann, B. (2025). Comparative investigation of the retinal phenotype of three mouse models of Alzheimer's disease with optical coherence tomography. *Investigative Ophthalmology & Visual Science*, 66(14), 35-35.

Patil, R., Shetty, R., Khamar, P., **Patel, Y.**, Narasimhan, R., Bhatkal, A., ... & Sinha Roy, A. (2024). Insights into atypical segmental layer thicknesses and phase retardation in thick corneas using ultrahigh-resolution polarization-sensitive optical coherence tomography. *Eye and Vision*, 11(1), 30.

*Complete publication list available upon request*

## PERSONAL INTERESTS

---

Choir singing, standard-formation dancing, hiking, playing acoustic guitar, football, online-gaming, cooking