WE'RE HIRING
SUPERHEROES

MISSION PHD: ACCESSING INTER-ORGAN SIGNALLING USING POSITRON EMISSION TOMOGRAPHY

PET/CT + YOU = ORGAN TALK

YOUR SUPERPOWERS

MASTERS IN SCIENCE

MEDICAL IMAGE ANALYSIS

AWESOME PROGRAMMING
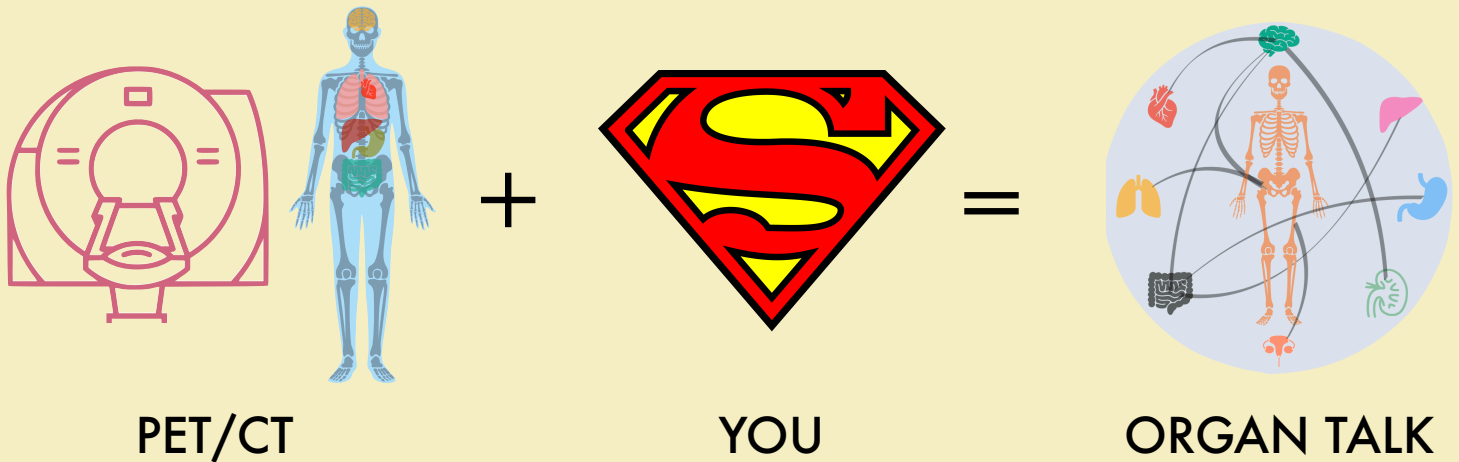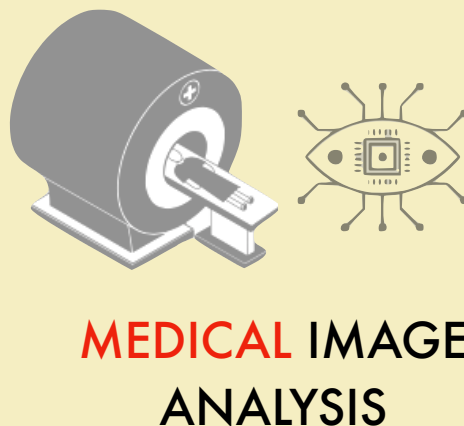
Job Description

Living organisms maintain homeostasis through dynamic multi-organ systemic interactions. Any notable deviations from their baseline homeostasis will be avoided with the aid of systemic feedback loops. Chronic pathologies (e.g. Cachexia) are conceived as sustained disruptions in baseline homeostasis, which cannot be compensated by systemic communications. These pathologies can, in theory, be characterised by deviations in parameters that extend beyond their usual range. Molecular imaging modalities, such as Positron Emission Tomography (PET), can provide valuable insights into the underlying homeostasis of living subjects using highly-specificity radiotracer imaging. We hypothesise that a computer-aided, multi-organ assessment in the spatio-temporal domain, using dynamic whole-body (DWB) PET, might provide valuable cues regarding the organisms' underlying homeostasis and its deviations during a pathology. We aim at a public framework for interrogating inter-organ signalling to overcome current obstacles to comprehensive use of molecular imaging in clinical decision making.

Key responsibilities

- Developing and validating robust diffeomorphic registration tools for the establishment of whole-body normative database.

- Establishing innovative computational methodologies for probing inter-organ communications in healthy and pathological cohorts.

Essential criteria

- Masters degree in one of the following areas: Biomedical engineering, Medical Imaging, Biomedical computing, Medical Physics.

- Proven competence (thesis or relevant work experience) in Medical Image analysis and Computer vision

- Strong programming skills in Python and MATLAB, ability to maintain in-house source software (GitHub)

- Ability to work calmly under pressure with excellent time-management skills.

- Emotional intelligence and Intercultural competence.

- Highly developed verbal and written communication skills.

Desirable criteria

- Experience with Artificial intelligence and associated packages (PyTorch, Keras, TensorFlow).

- Experience with Multi-variate time-series analysis.

What we offer

- Flat research Organisation | Comprehensive mentoring | Support for career development

- Inspirational scientific environment | Annual PhD conference | Bench-to-clinic work culture

Timelines and contact

- Application deadline: May 27, 2021 | PhD duration: 3 Years | Start date: Summer 2021 (TBD)

- Required documents: Curriculum Vitae | Motivation letter | University transcripts | Master thesis copy

- Contact person: Prof. Thomas Beyer, PhD, MBA | QIMP Team | Medical University of Vienna
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