Alberto Di Biase

MSc. Electrical Engineering | ✉️[asdibiase@uc.cl](mailto:asdibiase@uc.cl) | 📞️+56 9 7758 1497

Master in Electrical Engineer with an focus in magnetic resonance imaging (MRI) and medical imaging. I have experience working on deep learning research to accelerate and improve MRI. Currently I work as a research assitant at Imperial College London.

## Education 🎓️

* June 2020 Bs in Biomedical Engineering. Pontificia Universidad Católica de Chile
* November 2022 Electrical Engineering. Pontificia Universidad Católica de Chile
* November 2022 Master in Engineering Science. Pontificia Universidad Católica de Chile. Thesis: Intensity-based Deep Learning for SPION concentration estimation in MR imaging

## Skills

* Software ⌨️
  + MatLab
  + Python
  + JavaScript
  + C/C++ (basic)
  + Keras + Tensorflow
  + Pytorch
  + Wolfram Mathematica
  + Office
* Languages 🗣️
  + Spanish (native)
  + English (advance)
  + German (learning)

## Links 🔗️

* Github <https://github.com/tito21>
* Blog <https://tito21.github.io>

## Work History

* **Research Experience**
  + 2024 - present 🌐️ Research Assistant, Imperial College London. Department of Computing / Visual Information Processing
    - Supervisor: Sonia Nielles-Vallespin Ph. D & Daniel Rueckert Ph. D
    - Diffusion cardiac imaging.
  + 2022 - 2024 🌐️ Research Engineer, [iHealth Millennium Institute for Intelligent Healthcare Engineer](http://i-health.cl/)
    - Supervisor: Claudia Prieto Ph. D
    - Reconstruction of parametric maps from undersample MRI using physics informed neural networks.
  + Summer 2020 🌐️ Tokio, Japan, Sekino Lab, University of Tokyo
    - Supervisor: Masaki Sekino Ph. D
    - Acquisition and simulation of MR imaging to quantify SPIO concentrations in tissue using deep learning.
  + 2019 🌐️ [Biomedical Imaging Center](https://centroimagenesbiomedicas.uc.cl) PUC
    - Supervisor: Pablo Irrarazaval, Ph. D
    - Application of deep learning to improve undersampled MRI.
    - Participation in the fastMRI challenge <https://fastmri.org>.
  + Spring 2018 🌐️ [Biomedical Imaging Center](https://centroimagenesbiomedicas.uc.cl) PUC
    - Supervisor: Sergio Uribe, Ph. D
    - Liver segmentation from MRI using deep learning.
* **Internships**
  + Summer 2021 🌐️ Santiago, [European Southern Observatory (ESO)](https://www.eso.org)
    - Supervisor: Fernando Selman Ph. D
    - Develop a deep learning system to identify anomalies in calibration frames.
* **Teacher Assistance** 👨‍🏫️
  + Spring 2021, Biomedical imaging
  + Fall 2021, Introduction to Biomedical Engineer, Signal and Systems
  + Fall 2019 and Spring 2020, Image processing fundamentals
  + Fall 2018, Calculus III Lab

## Publications and Conference presentations

* **Di Biase A.**, Schneider A., Botnar R. & Pietro C. Model-based Deep Image Prior Reconstruction for iNAV-based 3D whole-heart T2 mapping. *Society for MR Angiography 36th Annual International Meeting*. Santiago Chile, November 2024
* **Di Biase A.**, Schneider A., Botnar R. & Pietro C. Model based rEconstruction by Deep Algorithm unrolLing (MEDAL) for fast 3D whole-heart T2mapping *2024 ISMRM & ISMRT Annual Meeting & Exhibition*. Singapore, May 2024.
* **Di Biase A.**, Liu S., Sekino M., & Irarrázabal P. Intensity-based Deep Learning for SPION concentration estimation in MR imaging, *2023 ISMRM & ISMRT Annual Meeting & Exhibition*. Toronto Canada, June 2023.
* **Di Biase A.**, Botnar R. & Prieto C. Finding Optimal Regularization Parameter for Undersampled Reconstruction using Bayesian Optimization, *2023 ISMRM & ISMRT Annual Meeting & Exhibition*. Toronto Canada, June 2023.
* della Maggiora, G., **Di Biase, A.**, Castillo-Passi, C., & Irarrazaval, P. Attention Based Scale Recurrent Network for Under-Sampled MRI Reconstruction. *2020 ISMRM & ISMRT Annual Meeting & Exhibition*. Virtual, August 2020.

## Extracurricular activities

* **Browser Extension UCaccess**, Developer
  + Allows easy and legal access to scientific papers through the university’s proxy server.
  + Code and extension: <https://github.com/tito21/UCaccess>
* **Robotics**, Coach and Tutor 🤖️
  + 2016 - 2017 One week workshop for 12-13 year old kids. Each kid could build and program their own mobile robot using the Arduino platform. I have also taught a similar workshop using the LEGO Mindstorm platform.
  + 2015 - 2016 Coach of a FIST LEGO League (FLL) team. The FLL challenge is an international robotics competition where each team has to develop a robot that solves a number of tasks and do a scientific investigation. In 2015 the team won the “Values” national prize.
* **Teleton Foundation**, Voluntary work
  + Summer 2018, Santiago
  + Help on the voluntaries’ office.
  + Help organize summer event.