

Yuri Rossi Tonin | Curriculum Vitae

Rua Menotti Arthur Grigol 95, Campinas, SP, Brazil, 13085-485

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Professional Experience

- **Brazilian Synchrotron Light National Laboratory (LNLS)- Sirius** **Campinas, Brazil**
Physics Engineer in Scientific Computing *2021-2024*
Computational science and engineering. Software development for image processing and reconstruction. Main activities focuses on Tomography, Coherent Diffractive Imaging (Ptychography, Plane Wave CDI) and High Performance Computing. Continuous documentation and support to users.
- **Brazilian Synchrotron Light National Laboratory (LNLS) - Sirius** **Campinas, Brazil**
Optical Engineer in Metrology *2019-2021*
Software development in Python for processing data on the surface quality of optical components, handling and mounting sensitive optics, control and automation of experimental setups in Labview and EPICS, CAD drawing of setups, technical documentation, maintenance of clean-room environment.
- **Brainlab AG - Medical Hardware and Software** **Munich, Germany**
Intern in Research & Development *2018*
Hardware testing and assembly, technical documentation, overall support.

Education

- **Campinas State University (Unicamp)** **Campinas, Brazil**
Masters in Applied Physics *2021-2022*
Dissertation: Image processing and reconstruction for Coherent Diffractive Imaging. **GPA: 4.0/4.0**
- **University of North Carolina at Chapel Hill** **Chapel Hill, USA**
Study abroad program in Physics, Dean's list Fall 2015 and Spring 2016, GPA: 3.796/4.00 *2015-2016*
- **Federal University of São Carlos (UFSCar)** **São Carlos, Brazil**
Bachelor's in Engineering Physics, GPA: 8.25/10.0 *2012-2018*

Notable Projects

- **Undergraduate Thesis at University of São Paulo (USP), Brazil:** *Development and implementation of a Magnetic Resonance Imaging processing method for evaluation of cirrhosis and liver function. Evaluated with maximum grade.*
- **Research at Illinois Institute of Technology, USA:** *Simulation of an interferometer for measuring antimatter gravity*
- **Research at University of North Carolina at Chapel Hill, USA:** *Construction and simulation of a gamma-ray pair spectrometer for meteorite studies*
- **Research at University of São Paulo, Brazil:** *1st Project: Development of high-resolution imaging system for cold atoms experiment. 2nd Project: Development of high-efficiency frequency doubling cavity to generate 421nm laser light*
- **Member of Startup team.** *Winner Startup competition "Your Idea in Practice - São Carlos edition"*
Being private lessons a highly demanded, informal and not well explored market in Brazil, we proposed to organize the offer of private teachers, support them, and create an online platform to help students outside of lessons.

Scholarships and Certificates

- Fully funded scholarship from the Brazil Scientific Mobility Program for a 1 year-long study abroad program
- Certificate in Advanced English (CAE) from University of Cambridge
- TOEFL iBT. Score: 113/120 (R:28/30 L:28/30 S:30/30 W:27/30)

Technical and Personal skills

- **Programming and Software skills:** Python, Labview, AutoDesk Inventor, git, EPICS. Shorter experience with: C, C++, Mathematica, Fortran, Geant4
- **Languages:** Fluent English, Advanced German, Basic Italian, Native Portuguese
- **Interests:** Reading | Cooking | Movies | Science

Publications

- **ssc-cdi: A Memory-Efficient, Multi-GPU Package for Ptychography with Extreme Data** ([Link](#))
Published in J. Imaging 10(11), 286, 2024.
- **Schwartz Symmetry Condition for Coherent Diffraction Imaging Patterns** ([Link](#))
Published in Symmetry 16(4), 399, 2024.
- **Ptychographic X-ray computed tomography of porous membranes with nanoscale resolution** ([Link](#))
Published in Nature Communications Materials, 2023.
- **Dimensional and optical metrology of ultra-stable exactly-constrained KB mirror sets** ([Link](#))
Published in Proceedings Volume 12240, Advances in X-Ray/EUV Optics and Components XVII, 2022.
- **Exactly-constrained KB Mirrors for Sirius/LNLS Beamlines: Design and Commissioning of the TARUMÃ Station Nanofocusing Optics at CARNAÚBA Beamline** ([Link](#))
Published in Mechanical Engineering Design of Synchrotron Radiation Equipment and Instrumentation (11th), 2021.
- **Surface metrology of cylindrical mirrors with sagittal curvature in low spatial frequency range** ([Link](#))
Published in Proc. SPIE 11492, Advances in Metrology for X-Ray and EUV Optics IX, 1149209, 2020.
- **A Low-Background Coincidence Spectrometer for Radioisotope Studies** ([Link](#))
Published in Nuclear Instruments and Methods in Physics Research A, v. 871, p. 66-71, 2017
- **Investigation of the Momentum Distribution of an Excited BEC by Free Expansion** ([Link](#))
Published in Journal of Low Temperature Physics, v. 180, p. 126-132, 2015
- **Nonlinear Dependence Observed in Quadrupolar Collective Excitation of a Trapped BEC** ([Link](#))
Published in Journal of Low Temperature Physics, v. 180, p. 144-152, 2015