

Ioana Monica Hasegan Ph.D.

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Skills

- * High-level Physics
- * Solid Mathematics, Quantitative Analysis
- * Advanced computer skills: Linux, Windows, Bash scripting, IRAF, MATLAB, ImageJ, FORTRAN
- * Hands-on laboratory experience in building, testing and characterizing optical systems
- * Substantial experience in image analysis and optimization, and spectroscopy data processing
- * Critical thinking and complex problem solving
- * Work experience in multi-disciplinary team
- * Teaching experience in multi-cultural environment
- * Presentation skills/dynamic communication style
- * Excellent interpersonal and writing skills

Education

- * Doctor of Philosophy in Physics and Astronomy, Rutgers University, NJ, USA, 2007
- * Master of Science in Nuclear and Particle Physics, University of Bucharest, Romania, 1998
- * Bachelor of Science, University of Bucharest, Romania, 1997

Experience

Research Fellow
Toronto, Canada

Samuel Lunenfeld Research Institute, Mount Sinai Hospital
2010-present

- * Performed quantitative and statistical image analysis on super-resolution optical images with specialized 2D and 3D software and code developed by myself
- * Performed imaging measurements of resolution and Point Spread Function on an OMX, Optical Microscopy eXperimental, world's highest resolution wide-field optical microscope
- * Published two papers: image analysis on centrosome organization in Nature Cell Biology 14, 1148, 2012 and another one in Current Biology (accepted in June 2013)
- * Troubleshooted 3D OMX image reconstruction artefacts in optical images
- * Troubleshooted hardware and software problems for OMX and DeltaVision microscopes
- * Tested and installed image processing and analysis software on laboratory's computers
- * Provided training and technical support to OMX end-users in hardware and imaging methods
- * Organized a STED microscope demo at the institute
- * Platforms used: UNIX, Windows, MATLAB, ImageJ, Bash scripting, SoftWoRx

Research Fellow
Toronto, Canada

Mouse Imaging Centre, Hospital for Sick Children
2007 - 2009

Ioana Monica Hasegan

- * Designed and built an improved Optical Projection Tomograph with an excellent spatial resolution and a higher depth of field, that is an essential tool in making cutting edge Biology discoveries
- * Conducted theoretical and computational studies to improve the optical apparatus
- * Designed, built on a laboratory breadboard, and characterized an improved imaging setup in an interdisciplinary team effort
- * Performed image analysis with specialized 2D and 3D software and code developed by myself
- * Presented results to institution members
- * Wrote an user manual for a prototype optical tomograph
- * Provided training and technical support to end-users in hardware and imaging methods
- * Platform used: UNIX, Windows, MATLAB, Amira, Bash scripting

Research Assistant
New Jersey, USA

Rutgers University
2002 - 2007

- * Designed and performed Astronomical observations using world-class optical telescopes in Hawaii and Arizona
- * Performed data analysis using specialized software, and custom code written by myself, and interpreted analytical results
- * Presented results at 4 international scientific conferences in USA and Switzerland, and few departmental seminars, and gave an invited talk at the Museum of Natural History, NY, USA
- * Published 3 scientific papers in peer-reviewed Astronomy journals
- * Platformed used: UNIX, FORTRAN, C++, Perl, IDL

Head Teaching Assistant
New Jersey, USA

Rutgers University
2003

- * Taught methods of teaching General Physics Labs to 20 international Teaching Assistants
- * Collaborated with the Head Laboratory Instructor to improve the lab format
- * Evaluated the effectiveness of the Teaching Assistants
- * Provided leadership, guidance, training, motivation and ongoing support to TAs

Teaching Assistant
New Jersey, USA

Rutgers University
2000 - 2002

- * Taught General Physics Laboratories to groups of 25 - 30 undergraduates
- * Explained the lab theory and the lab equipment, and demonstrated the experiments
- * Designed and implemented my own mid - semester evaluations
- * Organized and marked assignments for undergraduate laboratories

Research Assistant
Bucharest Romania

Institute for Space Science
1997 - 2000

- * Performed theoretical and computational Cosmology studies to estimate the detection probability of magnetic monopoles at the Gran Sasso international collaboration in Italy
- * Presented results at 2 international schools in Italy and published them in Romanian journals
- * Platforms used: Windows, FORTRAN, Excel, Word