NICHOLAS A. DEL GROSSO

PERSONAL INFO

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EDUCATION

Oct 2014 - Dec 2018 — *PhD. Candidate* — Graduate School of Systemic Neurosciences, Luedwig-Maximillians Universitaet

Aug 2012 — *M.Sc. Neuroscience* — Graduate Training Centre of Neuroscience, Eberhard Karls Universitaet Tuebingen

May 2010 — *B.Sc. Psychology* — Wittenberg University

TEACHING EXPERIENCE

April 2019 — *Trainer* — The Python Tsunami

In this compressed version of the "Intro. to Python" course, I led 100 biology students and 6 instructors in a conference-style 2-day course that culminated in a data jam showcasing their new programming and data analysis skills.

March 2019 — *Trainer* — Computer Graphics for Virtual Reality

Taught Object-Oriented Programming methdology in the context of designing a 3D Graphics library, including 3D matrix multiplication, shader graphics, and event loop programming.

August 2018 — *Trainer* — Int. Scientific Programming in Python

A 4-day workshop on good programming practices essential for writing robust, reusable Python code for scientific data analysis. Covered object-oriented programming, advanced iteration and automation structures in Python, performance profiling, testing, and packaging code. Throughout each unit, I emphasized idiomatic code style, good coding practices, and problem-solving strategies.

July 2018 — *Programming Instructor* — Teaching Statistics with R

This 4-day workshop is an intensive R course taught to the Psychology department professors at Kwantlen University in Vancouver, Canada. In this course, they learned the R programming language and how to build statistics teaching materials with it.

April 2018 - Present — *Organizer* — Munich Science Slam

Co-founded a tri-monthly science slam event series, working with 10-14 speakers from various institutes to give talks in a competion format. At the end of each event, I demonstrate a real-time evaluation system into the event for the 60 audience members to use for feedback.

April 2018 - Present — *Soft Skills Trainer* — Presentation Skills for Scientists

With this 1-2 day workshop, I taught effective talk organization and outlining skills for scientific presentations. Scientists gain confidence by learning how to focus on their goals and delivering speeches convincingly through repeated practice.

October 2017 — *3D Graphics Instructor* — Animal Tracking and VR Bootcamp

I co-taught an international, week-long workshop on combining animal tracking through machine vision methods and 3D graphics applications to build virtual reality systems for freely-moving animals. Besides theoretical lectures on the mathematics and engineering behind virtual reality systems, I wrote tutorials for software I wrote to teach the concepts, from which the participants, consisting of PhD students, Post-docs, and Professors, built their own prototype VR systems for ants.

Fall 2017 - Present — *Organizer* — PyData Munich

I revived a local chapter for the global PyData organization, coordinating with technology companies in Munich (e.g. Google, Nokia, TNG Consulting, JetBrains, and Wayra) to build a data-science teaching community through the MeetUp platform. These companies now host biweekly tutorials at their event spaces, sponsoring each event and providing spaces for university researchers and tech industry specialists to meet, interact, and learn together.

Summer 2017 — *Organizer* — Super Python Talks for Life Science

I organized a biweekly seminar series for teaching intermediate-level data analysis and Python programming tutorials, given by 10 PhD students and Pos-docs, including myself. Besides recruiting these speakers, I organized the room and equipment for these sessions, advertised the events, and ran the sessions. This series was successful; it was regularly attended by 30-70 researchers.

July 2016 - Present — *Trainer* — Intro. to Scientific Programming in Python

This 4-day workshop is an intensive version of the semester Python course I teach at LMU every few months. In this period, students with no programming experience gain the skills needed to perform data analysis and in Python and reason about their analysis workflow.

Summer 2016 - Summer 2017 — *Lecturer* — Intro. to Scientific Programming in Python

In this semester course, taught two years in a row, I taught beginning programmers data management, scientific data analysis, and programming skills in a new language (Python). Besides organizing and planning the course, I also prepared all course materials, homework assignments, and graded their final projects.

Winter 2013 - Summer 2014 — *Lecturer* — Introduction to Matlab

For 3 Semesters, I taught a 2-week introduction to programming course to beginning programmers. Besides organizing, planning, and teaching the course, I also prepared all course materials and homework assignments.

December 2015 — *Teaching Assistant* — Psychophysics

In this 2-week block course, I acted as tutor, providing technical and programming assistance to students programming and analysing their own psychopysics experiments in Matlab, R, and Excel.

2015 - 2017 — *Proofreader* — Freelance Proofreader

Proofread and Edited research papers for graduate students in medicine, neuroscience, and philosophy to programming

RESEARCH EXPERIENCE

Nov 2018 - July 2019 — *Max Planck Institute of Biochemistry* — Prof. Dr. Matthias Mann

Programmed high-throughput automated data collection and data analysis pipelines. I also designed and implemented a job-scheduling web application, implementing lean management methods to decrease data collection waiting times for 40 users and trained and mentored several biology and bioinformatics researchers in Python programming methods and open-source collaboration workflows, as well as gave introductory programming workshops for over 150 researchers.

May 2013 - Nov 2018 — *Ludwig-Maximillians Universitaet* — Prof. Dr. Anton Sirota

Programmed a 3D graphics engine in Python to build virtual reality system for freely moving rats, supervised students in programming, engineering, and cognitive science projects, organized weekly journal clubs, and ordered new equipment, trained rodents to perform behavioral tasks, and performed surgery on said rodents as part of brain research.

INDUSTRY EXPERIENCE

Freelance Scientific Consultant — UKT Psychosomatic Med. and Sports Med.

I evaluated and designed a solution for performing medical science studies in a placebo study, and taught the PhD student who carried out the study over several remote sessions and a few travel consultations.

Research Internship — The Neuromarketing Labs

I completed set-up of an EEG laboratory, including software calibration and noise measurements. Designed and ran two experiments estimating the evoked responses of semantic agreement and price agreement, then analyzed the data. The results from the second experiment are the basis of Dr. Muellerâ€™s recently-published book, "Neuropricing". Currently volunteering as an EEG consultant by giving one-day workshops on Fieldtrip, SPM, and artifact correction methods.

JOURNAL PUBLICATIONS

Nicholas A. Del Grosso, Justin J. Graboski, Weiwei Chen, Eduardo Blanco HernÃ¡ndez, Anton Sirota. “Virtual Reality system for freely-moving rodents.” bioRxiv 161232. July 2017; doi=https://doi.org/10.1101/161232

Broetz D., Del Grosso, N.A., Rea M., Ramos-Murguialday, A., Soekadar S.R., Birbaumer, N. “A New Hand Assessment Instrument for Severely Affected Stroke Patients.” Journal of Neurorehabilitation. 2014; 34(3), 409-27.

Benoit, J.B., Del Grosso, N.A., Yoder, J.A., Denlinger, D.L. “Resistance to Dehydration between Bouts of Blood Feeding in the Bed Bug, Cimex Lectularius, is Enhanced by Water Conservation, Aggregation, and Quiescence.” American Journal of Tropical Medical Hygience. May 2007; 76(5), 987-93.

SKILLS

- **Languages**: English (Mother Tongue), German (Level B1), French (Level A1-2)
- **Programming**: Python, R, Matlab, GLSL, Docker, LabView, C, Bash/Linux, LaTeX, Arduino
- **Stimulus Presentation**: Psychopy, Neurobs Presentation, Psychophysics Toolbox, OpenGL, Pyglet, Vispy, SuperLab, RatCAVE
- **Statistical Analysis**: Python SciPy Stack (Pandas, Numpy, Matplotlib, etc), Statistical Parametric Mapping (SPM), SPSS, R, Matlab Statistics Toolbox, Fieldtrip, gTec Analyze, BrainVision Analyzer
- **Data Workflow Management**: Snakemake, PyDoit, Docker, Singularity
- **Graphics**: Blender3D, Adobe Suite (Photoshop, Illustrator, and InDesign), OpenGL, Google SketchUp, Open Source Suite (GIMP, Inkspace, and Scribus)

- **Wet Lab Skills**: Rat Neurosurgery, Animal Behavioral training (rats and monkeys), in vivo electrophysiology (single needle electrodes, chronically-implanted electrode arrays, noninvasive arrays of EEG electrodes and MEG sensors), Basic Electronics, Comfortable with building custom laboratory equipment
- **EEG System Experience**: BrainProducts, gTec, Grass Instruments, CTF

AWARDS

October 2017 Hackathon 3rd Place Winner and "Most Creative Team" Award at Burda Bootcamp Event "Health and Fitness Hackathon"

July 2017 Hackathon Track Winner at Media Lab Bayern Event "FutureLab--Smart Home meets Journalism"

April 2017 Hackathon Winner at Burda Bootcamp Event "Love Hackathon"

2016 Best Talk Award at Interact Munich Conference

2015 Best Poster Award at Interact Munich Conference

2011 National Science Foundation Graduate Research Fellowship

2008 NSF Neuroscience REU Fellowship at Duke University

June 17, 2019