Isaac David Reyes González

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Computer engineer and MSc in neurobiology based in Madison, USA. My interests span theoretical and cognitive neuroscience, with a focus on fundamental consciousness research.

Professional experience

- (Apr 2022 - Apr 2023) **Honorary visiting associate**

  Center for Sleep and Consciousness, Department of Psychiatry, University of Wisconsin-Madison

- (Mar 2022 - present) **GNU+Linux support engineer II**

  Rackspace México

- (Mar 2021 - Jan 2022) **GNU+Linux system administrator**

  Neubox, the biggest web hosting provider and domain registrar in Mexico

- (Jun 2021-Jul 2021) **Teaching Assistant**

  Neuromatch Academy, an online summer school for computational neuroscience

- (Jun 2020 - Jul 2020) **Teaching Assistant**

  Neuromatch Academy, an online summer school for computational neuroscience

- (Mar 2016 - Mar 2017) **Research Assistant**

  Center for Research in Geography and Geomatics

- (Jan 2016 - Mar 2016) **IT Security Engineer**

  Softtek

Education

- (Sep 2023 - present) PhD in Neuroscience

  University of Wisconsin - Madison

- (Aug 2018 - Apr 2021) Master of Science, Neurobiology (with honors)

  National Autonomous University of Mexico (UNAM)

  Thesis (in Spanish): *Estudio de los correlatos neurales de la percepción emocional por análisis de patrones en multitud de voxeles*

  Supervisor: Dr. Fernando Barrios

- (Jan 2018 - unfinished) Master of Science, Cognitive Science

  Autonomous University of the State of Morels

- (Aug 2011 - Dec 2015) Bachelor of Engineering, Computer Engineering

  Autonomous University of Aguascalientes

- (Aug 2008 - Jun 2011) High school diploma (*with honors*)

  Monterrey Institute of Technology and Higher Education (ITESM)

- (Aug 2005 - Jun 2008) Middle school diploma (*with honors*)

  Escuela Secundaria Técnica No. 1, "Prof. José Reyes Martínez"

Courses

A list with all university-level courses I have taken is available here.

Conferences and schools

- (2022) Neuroscience School of Advanced Studies. Extended Advanced Course on Consciousness. Venice, Italy.

- (2020, 2021) Neuromatch Academy: An online school for Computational Neuroscience

- (2020) Organization for Human Brain Mapping, Annual Meeting.

- (2019) XXI Reunión de neuroimagen. Guanajuato, Mexico.

- (2018) XX Reunión de neuroimagen. Guanajuato, Mexico.

Publications

- (2022) Larissa Albantakis, et al. *Integrated information theory (IIT) 4.0: Formulating the properties of phenomenal existence in physical terms.* (preprint)

- (2022) Bernard Hart, et al. *Neuromatch Academy: a 3-week, online summer school in computational neuroscience.* Journal of Open Source Education

- (2021) Isaac David, Fernando Barrios. *Localizing Brain Function Based on Full Multivariate Activity Patterns: The Case of Visual Perception and Emotion Decoding* (preprint)

- (2021) Isaac David. *Estudio de los correlatos neurales de la percepción emocional por análisis de patrones en multitud de voxeles* (master's thesis). Universidad Nacional Autónoma de México

- (2016) Isaac David, Oscar Siordia, Daniela Moctezuma. *Features combination for the detection of malicious Twitter accounts.* IEEE Xplore

Conference presentations

- (2020) Isaac David, Fernando Barrios. *Neural correlates of emotional perception by Multi-Voxel Pattern Analysis.* Organization for Human Brain Mapping, Annual Meeting.

- (2019) Isaac David, Federica Sassi, Fernando Barrios. *Neural correlates of emotional perception by Multi-Voxel Pattern Analysis.* XXI Reunión de neuroimagen. Guanajuato, Mexico.

Skills

Languages

- Spanish (Castilian), native

- English, proficient (C1 or above):

- (2019) TOEFL iBT, 111/120
- (2011) TOEIC, 920/990

- French, intermediate

Neuroimaging equipment and protocols

Under the supervision of technicians and professors, I have co-collected behavioral, fMRI (task and resting-state), T1-weighted and T2-weighted data from tens of healthy adult subjects in a 3-Tesla General Electric Discovery MR750 magnetic resonance scanner.

Similarly, I have participated in tens of neuroimaging study protocols (including diffusion-weighted studies and all sorts of psychological tasks), using both the aforementioned scanner and a 3-T Philips Achieva TX system.

Computer skills

- **Certifications**:

  - (2023 - lifetime) Python Institute. *Certified Associate in Python Programming (PCAP 31-0x)*

- **Languages**:

  - Advanced: R, {,ba}sh, Python, Make, Markdown
  - Intermediate: sed, awk, TeX, SQL, HTML, CSS, javascript, C, Java
  - Basic: C++, Matlab, Emacs Lisp, PHP

- **ML libraries and frameworks**: NumPy, Scikit-learn, pyMVPA, PyTorch

- **Neuroimaging software**: FSL, pyMVPA, FreeSurfer, MRtrix, XNAT

- **Psychophysics software**: PsychoPy

- **Operating systems**: GNU+Linux and Unix-like operating systems, over 12 years of daily and professional experience (Arch-based systems, Debian/Ubuntu, Fedora/RedHat/CentOS, CloudLinux)

- **Init systems**: systemD, sysV, openRC

- **Network services**: HTTP/S (Nginx, Apache, Cherokee, Lighttp), SMTP (Postfix, Exim), IMAP/POP (Dovecot), SSH (OpenSSH), rsync, DNS, tcpdump

- **Database servers**: MariaDB/MySQL, PostgreSQL, MongoDB

- **Monitoring**: NagiosXI, Nimbus

- **Provisioning (infrastructure-as-code)**: ansible

- **Big Data**: MapReduce/Hadoop

- **Virtualization**: KVM/qEMU, proxmox, vmWare, VirtualBox

- **Containers**: chroot, docker, singularity

- **Shared hosting**: CloudLinux, cPanel, DirectAdmin

- **Filesystems**: ext{3,4}, btrfs (ZFS-like), xfs, NFS

- **Version control systems**: Fossil, Git

- **Cryptography**: PGP (GPG key or fingerprint 38D33EF29A7691134357648733466E12EC7BA943), OpenSSL

- **Bootloaders**: GRUB 2, uboot

- **Software engineering methodologies**: Kanban, Scrum

Awards

- (2021) National Autonomous University of Mexico, *Alfonso Caso Medal* (announced).
- (2015) National Center for the Evaluation of Higher Education (CENEVAL), *National Bachelor's Degree Graduation Exam (EGEL). Outstanding performance diploma.*
- (2010) Monterrey Institute of Technology and Higher Education, *II Alfonso Reyes Contest for Graphic Creation. 2nd best cartoon.*
- (2007, 2008, 2010) Mexican Mathematical Olympiad, *State Finals. 1st prize* (shared).
- (2009) Mexican Olympiad in Informatics, *State Finals. 1st prize* (shared).
- (2008) Ministry of Education of Aguascalientes (IEA), *Aguascalientes Educational Excellence Award (PREXEA).*

- (2008) National Center for the Evaluation of Higher Education (CENEVAL), *National Higher Education Entry Exam (EXANI-I). 2nd best score at the State level.*
- (2007) Presidency of Mexico. *Award for Academic Achievement* (multiple recipients).
- (2005) Secretary of Education (Mexico), *Children's Olympiad of Knowledge. School district 1st prize.*

Scholarships

- (2022) Neuroscience School of Advanced Studies, Italy. *Extended Advanced Course on Consciousness. Student scholarship.*
- (2008 - 2011) Monterrey Institute of Technology and Higher Education. *Prepa Tec scholarship at 80%.*

Memberships

- (2022 - present) Association for the Scientific Study of Consciousness
- (2020 - 2022) Organization for Human Brain Mapping
- (2016 - present) Free Software Foundation
- (2013 - 2015) Jazz Big Band, Autonomous University of Aguascalientes
- (2012 - 2016) Ensamble Real de Jóvenes Universitarios (youth orchestra), Autonomous University of Aguascalientes

Amusement

- I am an amateur pianist with a taste for all sorts of art music (some recorded performances here, here and on my website).
- I used to devote much of my spare time to drawing and painting. The appetite has vanished in recent years though. Works also available on my website.

Volunteering

- I was a volunteer for the Free (i.e. Libre) Software community, more prominently for Parabola, a variant (also known as distro) of the GNU+Linux operating system. There as an official hacker from 2015 to 2018 I co-founded the ARMv7 port, rescued the i686 port from abandonment, maintained packages up-to-date, helped improve some of the development tools and server infrastructure; among various things.
- I have been editing Wikipedia steadily since 2011. The motivation for producing unrestricted culture and educational material is analogous to my advocacy for libre software.