PUTI WEN 温菩提

Neuroimaging Scientist | Research Infrastructure | MRI Analysis & Clinical Imaging Tools
Abu Dhabi, UAE | pw1246@nyu.edu | LinkedIn | putiw.github.io (Interactive Portfolio)

A somewhat unconventional neuroscientist. My Ph.D. was in visual neuroscience, but these days I spend most of my time building the infrastructure, pipelines, and practical software that keep brain-imaging projects moving: large MRI datasets, multiple-sclerosis research, and clinician-facing tools. I work comfortably across psychology, radiology, engineering, and clinical neurology, especially when a useful problem doesn't fit neatly inside one field.

CORE TECHNICAL STRENGTHS

Infrastructure: XNAT, Slurm/Jubail HPC, Docker, Singularity/Apptainer, GitHub Actions, Box API
Neuroimaging: fMRIPrep, FreeSurfer, TractoFlow, MRIQC, BIDS, dcm2bids, DICOM, ANTs, SPM12, MELD/MAP18
Programming: Python, MATLAB, TypeScript/JavaScript, React Native, Next.js, Node.js/Express, Three.js, Supabase

EXPERIENCE

Postdoctoral Fellow | NYU Abu Dhabi, Center for Brain and Health *Sep 2024 – Present*

Research infrastructure & analysis

- **Imaging data platform.** Integrated and deployed leading open-source neuroimaging tools (fMRIPrep, MRIQC, TractoFlow, HCP, dcm2bids, deep-learning visual-area segmentation) as containerized XNAT/HPC pipelines, so researchers run them on their own data directly on the platform; also built two in-house (a BIDS-to-HCP converter and the ARI validator), plus automated data-curation/QA, a nightly validation dashboard, XNAT-to-Box backup, and the documentation the imaging team relies on.
- **Scanner-upgrade QC.** Ran cross-scanner QC (SNR/tSNR/CNR): Siemens CIMA.X in Germany vs NYUAD's Prisma, NYUAD's Prisma vs UAEU, and NYUAD's Prisma vs the newly installed on-site CIMA.X; the comparison report supported NYUAD's decision to upgrade to the CIMA.X.
- **Normative brain dashboard.** Processed 9,000+ HCP and ADNI subjects into an age- and sex-referenced dashboard with an upload-and-compare interface.
- **Stimulus-computer migration.** Rebuilt the CBH MRI stimulus setup from Intel to Apple Silicon: ported and tested all active experiments, built reusable experiment templates for future studies, and restored EyeLink eye-tracking and VPixx/ProPixx integration.
- **MS imaging analysis.** Co-led tract-based quantitative MRI analysis across 27 white-matter pathways, testing whether lesion location and tissue composition predict MS disability beyond total lesion load.
- **Cross-department fMRI support.** Co-author on an Engineering EEG-fMRI brain-computer interface (BCI) study of how the brain's hand representation reorganizes as users learn to control a supernumerary robotic thumb by motor imagery (pre/post-training).
- **Training & support.** Trained 10+ researchers across fMRI, diffusion, vision, biobank, genetics, and MS projects; resolved 25+ reported data-validation and pipeline issues; built afqView, a BIDS-aware browser app for reviewing tractography across 116 subjects.

Clinical imaging tools & support

- **LesionView.** Built longitudinal lesion review and clinician-facing HTML/PDF report generation for new and enlarging MS lesions; migrated the original MATLAB prototype to a browser-based app and iterated weekly with Yas Clinic neurologists. Co-inventor on a provisional patent application (NYU Ref. ABD01-03).
- **CvsView.** Central-vein-sign and paramagnetic-rim-lesion review; fixed SWI-FLAIR registration artifacts by relabeling data, built a LightGBM classification workflow, and containerized it for internal research evaluation and clinician review (piloted with Harley Street Medical Centre).
- **Brain-atrophy pipeline.** Built for internal research review and reporting in collaboration with Yas Clinic clinicians; also ran FLAIR* central-vein-sign processing for Harley Street Medical Centre and Cleveland Clinic Abu Dhabi.
- **Epilepsy MRI.** Processed epilepsy MRI at Cleveland Clinic Abu Dhabi using MELD and an in-house MAP18/VBM workflow; built a 1,618-subject reference model, prepared technical reports, and joined an epilepsy multidisciplinary meeting.
- **Presurgical fMRI.** Supported task-based fMRI language mapping for an arteriovenous-malformation case: assisted with acquisition, processed and analyzed the data, and reviewed results with the clinical team.

Ph.D. Researcher | New York University, Psychology & Center for Neural Science *Aug 2019 – Sep 2024*

- Investigated neural pathways for 3D motion perception using stereoscopic stimuli, psychophysics, fMRI, cortical-surface analysis, and multivoxel pattern analysis; developed single-trial decoding methods.
- Published three first-author papers (Journal of Neuroscience, Imaging Neuroscience, NeuroImage); released code and data through GitHub and OpenNeuro.

Research Assistant | Vanderbilt University, Randolph Blake Laboratory *2016 – 2018*

- Designed and ran audiovisual-timing experiments; contributed to a first-author publication in Vision (2020).

EDUCATION

Ph.D., Cognition and Perception | New York University *2019 – 2024*
B.S., Psychology; Minor in Mathematics | Belmont University *2015 – 2018*
Computational Neuroscience: Vision Workshop | Cold Spring Harbor Laboratory *2022*

SELECTED PUBLICATIONS & PREPRINT

Wen, P., Thompson, L. W., Rosenberg, A., Landy, M. S., & Rokers, B. (2025). Single-trial fMRI decoding of 3D motion with stereoscopic and perspective cues. *Journal of Neuroscience, 45*(22).
Wen, P., Ezzo, R., Thompson, L. W., Rosenberg, A., Landy, M. S., & Rokers, B. (2025). Functional localization of visual motion area FST in humans. *Imaging Neuroscience, 3*.
Wen, P., Landy, M. S., & Rokers, B. (2023). Identifying cortical areas that underlie the transformation from 2D retinal to 3D head-centric motion signals. *NeuroImage, 270*, 119909.
Wen, P., Opoku-Baah, C., Park, M., & Blake, R. (2020). Judging relative onsets and offsets of audiovisual events. *Vision, 4*(1), 17.
Mohamed, A. Z., et al. (incl. **Wen, P.**) (2026). The ASPIRE Research Institute Dataset. *Scientific Data, 13*, 186.
Abdullah, O.*, **Wen, P.***, et al. (2025). Tract-based quantitative MRI for resolving the clinico-radiological paradox in multiple sclerosis. *medRxiv*. *Equal contribution.

INTELLECTUAL PROPERTY, GRANTS & RECOGNITION

- Co-inventor on provisional patent applications for LesionView and the automated cloud-based MS MRI pipeline / LAMINATE, filed via NYU Technology Opportunities & Ventures, May 2026.
- Co-investigator on an Abu Dhabi Department of Health grant application on MRI characterization of optic-nerve myelination (with Cleveland Clinic Abu Dhabi and Polytechnique Montréal), submitted January 2026.
- First Place Poster, NYU Abu Dhabi Division of Science Annual Research Conference, January 2025.
- Co-author, LAMINATE oral presentation: Best Presentation Award, Tenth MENACTRIMS Congress, December 2025.

SELECTED TALKS & PRESENTATIONS

- WHX Dubai Total Radiology Conference: invited talk on AI-powered detection of new lesions and central vein sign in MS; panelist on AI in neuroradiology (Feb 2026).
- Invited talks and lectures at NYUAD (MS Workshop, CBH Winter Symposium, Neuroimaging Workshop) and the NYU Vision Journal Club (2022–2025); research briefings to NYUAD leadership and a Siemens Healthineers delegation.
- Posters and talks at Vision Sciences Society (2022–2024), ISMRM (2025), OHBM (2025), MENACTRIMS (2024–2025), and Innovations in Neuroimaging Methods (2026).

OUTSIDE THE LAB

MyPhysio: physiotherapy practice app *2026*

- Co-built a full-stack React Native / Next.js / Supabase app with admin dashboards, patient portals, exercise prescription, and pain and range-of-motion tracking.

Shrimp: aquarium simulation game (live) *2026*

- Browser-based Phaser game with shrimp genetics/DNA testing, multi-tank management, aquascaping, save slots, custom animation, and offline/PWA support.

Languages: English and Chinese; basic Turkish. I design shirts and scientific illustrations for Cold Spring Harbor Laboratory and NYUAD's Center for Brain and Health, make science videos through N.A.R. Things, and keep a self-sustaining aquarium with no filter or routine cleaning. My artwork has appeared in fashion shows in China, and I once reached Grandmaster in Teamfight Tactics.