NYKKO VITALI

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Research Interests

🔖 Computational social psychology, large language models, natural language processing, cognitive consistency, metacognition

Education

2024 - Present	🔖	**Ph.D. Student, Harvard University** Doctoral Program in Psychology
2018 – 2020	🔖	**BA, University of Pennsylvania** Major in Psychology *Cum Laude*
2016 – 2018	🔖	**AA, Community College of Philadelphia** Major in Psychology *Highest Honors*

Employment History

2021 – 2022   🔖 **Clinical Research Coordinator,** Frontotemporal Degeneration Center, University of Pennsylvania

- Managed the 4RTNI-2 multi-center clinical trial, focusing on neuroimaging and cognitive outcomes within a longitudinal framework
- Administered neuropsychological tests (MMSE, MoCA, UDS-3) to assess cognitive issues in frontotemporal degenerative diseases
- Executed preprocessing in neuroimaging pipelines using Bash and conducted voxel-wise non-parametric analyses in FSL

2022 – 2024   🔖 **UX Research Assistant,** Exponent

- Conducted structured user experience studies with hundreds of participants, guiding interactions with prototype devices tracking motion and physiology metrics
- Developed bash scripts for accelerated data offloading, saving dozens of hours throughout project duration
- Designed an offline search program using MS MARCO Distill BERT through the Sentence Similarity Library for efficient, secure document retrieval

Research Publications

Journal Articles

1. S. Lehr, K. Saichandran, E. Harmon-Jones, N. Vitali, and M. Banaji, "Kernels of selfhood: GPT-4o shows humanlike patterns of cognitive consistency moderated by free choice," *OSF Preprints*, 2025, Preprint. 🔗 DOI: 10.31219/osf.io/zewbr_v1.

2. E. Rhodes, D. Mechanic-Hamilton, J. S. Phillips, *et al.*, "Discrepancies in patient and caregiver ratings of personality change in Alzheimer's disease and related dementias," *bioRxiv*, 2023. 🔗 DOI: https://doi.org/10.1093/arclin/acad079.

Technical Projects

ClaudeR
2025

Developed an R package that bridges RStudio with Claude AI, enabling interactive coding sessions where Claude executes code and displays results in real time. **GitHub Repository**.

AI Anthropomorphization Analysis
2025

Created a data pipeline analyzing how Twitch viewers anthropomorphize AI during gameplay. Used LLMs to detect patterns of emotional, cognitive, and social attributions across different gameplay events.

ParticleVerse
2024

Developed an innovative visionOS app that leverages advanced hand-tracking to create and manipulate particle effects. Features dual modes with unique gesture controls, an integrated guide for user interaction, and real-time content generation—all while preserving user privacy. **Project Website**.

Neuroimaging AR Pipeline for Vision Pro
2024

Developed a processing pipeline to convert 7T MRI scans into interactive 3D brain models for Apple Vision Pro using FreeSurfer, custom Python scripts, and Blender for anatomical visualization. **LinkedIn Post**.

Document Retrieval with LLM
2023

Constructed a language model tool for offline document search using sentence embeddings and cosine similarity, enabling secure information retrieval without external API calls. **GitHub Repository**

Skills

Coding	R, Quarto, Python, Swift, Bash
Databases	PostgreSQL, MongoDB
Web Dev	Html, css, JavaScript, Flask

Miscellaneous Experience

Awards and Achievements

2025	**Rand Fund Grant**, Using NLP to Study Online Moral Discourse, $8,000
2018	**Magner Nichols Public Speaking Award**, 2nd Place
2016	**Phi Theta Kappa Honor Society**