ENES ALTUN

🎓 EDUCATION

2020

Akdeniz University Department of Psychology
B.A. in Psychology ⚲ Antalya, Turkey

2022

Akdeniz University Department of Psychology
M.A. in Psychology ⚲ Antalya, Turkey

Thesis: *Visual Processing Of Different Race And Great Ape Faces In the Context Of Spatial Frequency: An ERP Study* https://www.tandfonline.com/doi/full/10.1080/13506285.2024.2415721

💻 RESEARCH EXPERIENCE

2017 | 2021

Undergraduate Research Assistant
Akdeniz University Cognitive Neuroscience Lab ⚲ Antalya, Turkey
- Conducted EEG data collection, wrangling, analysis, and machine learning modeling
- Developed electronic devices like GSR sensors and robotic fingers using Arduino and Python

2021 | 2023

Graduate Research Assistant
Akdeniz University Cognitive Neuroscience Lab ⚲ Antalya, Turkey
- Specialized in image processing, computer vision, and machine learning

</> INDUSTRY EXPERIENCE

Jul 2023 | Present

Rust Developer
Empatik AI ⚲ Stockholm, Sweden

- Optimized diverse AI models (vision, audio, V/LLMs) in Rust for cross-platform deployment (macOS, Windows with GPU optimized) with reduced latency and memory footprint in Tauri desktop app
- Engineered GStreamer pipelines with GPU acceleration, memory optimization, and parallel processing for real-time multimedia analysis
- Developed data fusion architecture for multimodal inputs (audio, visual, textual) using Apache Arrow/Data Fusion
- Implemented advanced pre/post-processing algorithms for complex time series data visualization and analysis
- Developed responsive UI with NextJS, TypeScript, and React for the Tauri desktop application, creating seamless integration between front-end components and Rust-powered backend functionality

Web: altunenes.github.io

CONTACT INFO

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 github.com/altunenes
 kaggle.com/enesaltun
 personal site
 ORCID
🎓 Google Scholar
in LinkedIn

SKILLS

Machine Learning & Deep Learning:
Model opt/Deployment: ONNX, torch
Multimodal Data Processing

Graphics Programming:
WebGPU/wgpu with Rust
Advanced GLSL&WGSL shading Languages

Data Visualization & Analysis:
Advanced time Series Visualization, analysis, smoothing
Parallel Data Processing: Apache Arrow, Data Fusion

Audio/Video Processing:
Media Frameworks: GStreamer (Rust based: CPU/GPU optimization, filtering, synchronization)
Video pipelines: Decoding/encoding, frame synchronization for precise temporal analysis
Audio pipelines: Multi-rate processing, noise reduction, filtering with custom parameters

Software: E-Prime, BrainVision, Blender

EEG: Designing experiments, signal processing: MNE/EEGLAB/BrainVis

Programming Languages:
Python (Advanced)
R (Advanced)
JavaScript/TypeScript (Advanced)
Rust (Advanced)

📄 SELECTED PUBLICATIONS AND POSTERS

Altun, E., Er, M. N., & Gülbetekin, E. (2024). The early visual processing of faces in a basic classification task: An ERP study of spatial frequency, other-race and other species effect. *Visual Cognition*, 1–24. https://doi.org/10.1080/13506285.2024.2415721

Evrim Gülbetekin, Enes Altun, Muhammed Nurullah Er, Arda Fidancı, Pakize Keskin & Dilara Steenken (2021). Effects of right or left face stimulation on self and other perception in enfacement illusion, *Social Neuroscience*, 16:2, 189-205, DOI: 10.1080/17470919.2021.1886983

Evrim Gülbetekin, Seda Bayraktar, Deniz Kantar Gül, Ece Varlık Özsoy, Muhammed Nurullah Er, Enes Altun & Arda Fidanci (2023). Does Tactile Stimulation of the Face Affect the Processing of Other Faces? Neural and Behavioural Effects of Facial Touch, *Social Neuroscience*, DOI: 10.1080/17470919.2023.2245126

Gülbetekin, E., Fidancı, A., Altun, E., Er, M. N., & Gürcan, E. (2023). Effects of mask use and other-race on face perception, emotion recognition, and social distancing during the COVID-19 pandemic. *Asian Journal of Social Psychology*, 00, 1–16. https://doi.org/10.1111/ajsp.12570

How do We Process Faces from Different Ethnic Groups and Species?
Gülbetekin E., Fidancı A., Altun E. *Society for Neuroscience Annual Meeting 2023*, Washington

How do We Perceive Masked Faces during COVID 19 Pandemic
GÜLBETEKİN E., FİDANCI A., ALTUN E., ER M. N., KAPLAN E. E. *37th Annual Meeting of the International Society for Psychophysics Fechner Day 2021*, 19 October 2021

Gülbetekin E., Altun E., Er M.N., "Does own species matter? Holistic Face Perception for Great Apes", *International Behavioral Neuroscience Society (IBNS) Online Poster Sessions*, Texas, USA, 3-7 August 2020, pp.1-1

Gülbetekin E., Bayraktar S., Varlik Özsoy E., Kantar Gök D., Altun E., Er N., et al.,"Effects of Tactile Stimulation on Face Perception", *Fechner Day 2019*, Antalya, Turkey, 30 October - 2 November 2019, pp.30-30

ALTUN E., Er N., Gülbetekin E. "Does genetic similarity matter? Face recognition performance for primates", *Fechner Day 2019: 35th Annual Meeting of the International Society for Psychophysics*, Antalya, Turkey, 30 October - 2 November 2019, pp.91-92

Er N., ALTUN E., Fidanci A., et al., "EFFECT OF STIMULATED FACE SIDE ON MULTISENSORY PERCEPTION", *Fechner Day 2019: 35th Annual Meeting of the International Society for Psychophysics*, Antalya, Turkey, 30 October – 2 November 2019, pp.79-79

Evrim Gülbetekin, Seda Bayraktar, Deniz Kantar, Enes Altun, Nurullah Er, Arda Fidancı "Yüz Algısında Görsel-Dokunsal Uyarımın Etkileri" *18. Ulusal Sinirbilim Kongresi*, Ankara, Turkey, 6-9 Kasım 2020, PP5-045.

Altun, E. (2023). altunenes/scramblery: 1.2.5 (1.2.5). *Zenodo*. https://doi.org/10.5281/zenodo.10028991
https://github.com/altunenes/scramblery/tree/main

Muhammed Nurullah Er, Enes Altun, Evrim Gülbetekin "Türler Arası Benzerlik Fark Yaratır Mı? Büyük Maymun Yüzlerine Yönelik Bütünsel Yüz İşleme" *18. Ulusal Sinirbilim Kongresi*, Ankara, Turkey, 6-9 Kasım 2020, PP5-007.

Gülbetekin E., ALTUN E., Er N., Fidanci A., Keskin P., İlhan Y., et al., "Ben mi, Diğeri mi?: Çok Duyumlu Uyarımın Yüz Algısı Üzerindeki Etkisi", *20. Ulusal Psikoloji Kongresi*, Ankara, Turkey, 15-17 Kasım 2018, ss.1-1

🔖 MANUSCRIPTS IN PROGRESS

Altun Enes; Er M.N; Gülbetekin E. (Under Review) Exploring the Distinctiveness of Early Visual Processing in Human and Illusory Faces: An ERP Study of Spatial Frequency Effects. Available at SSRN: https://ssrn.com/abstract=4341900 or http://dx.doi.org/10.2139/ssrn.4341900

Alagöz F., Kürme T., Altun E., Er M.N., Gülbetekin E. (in-prep) How do I perceive your face buddy? Investigation of facial movement of AU101 in dog faces in the context of sadness, happiness, and baby schema in the human brain: An ERP Study.

Er, M.N, Altun E, Gülbetekin E. (in-prep) The Role of Dorsal and Ventral Visual Pathways on Holistic Processing of Individual Facial Parts: An ERP and Spatial Frequency Study

SOME OPEN SOURCE PROJECTS

Rust, WGSL

Cuneus

Graphic Engine for Creative Coding: WebGPU-powered with GStreamer integration for real-time video processing through custom shaders

📍 2024

Rust

Scramblery

Cross-platform Desktop app (Tauri backend) for image/video scrambling with various methods including Fourier phase scramble, featuring ONNX-powered facial detection for targeted region processing

📍 2021

Python, JavaScript

Sorceress

Library for creating/reproducing visual illusions and perceptual effects

📍 2021

Rust

Butter2D

Pure Rust implementation of the Butterworth filter for spatial frequency filtering of images

📍 2023

Rust

Weber-Fechner

Template for psychophysics experiments implementing the Weber-Fechner law of perception using Bevy engine with WASM support

📍 2023