



How to Teach Humans to Teach AI Multi-Perspective Multimodal Analysis of Bodycam Footage

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Motivation & RQ

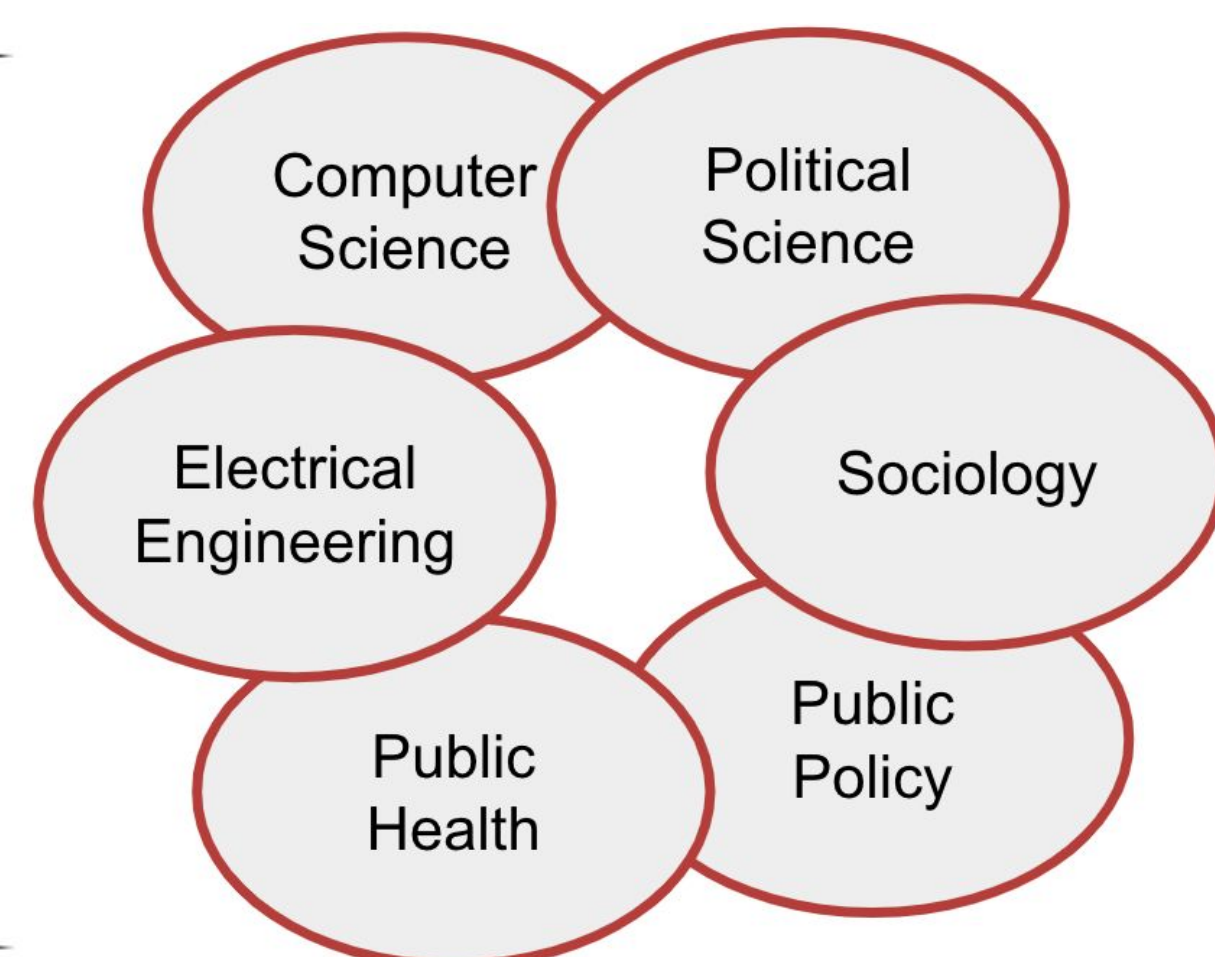
"We record every traffic stop but only review footage manually when a complaint occurs. Could you assist us in analyzing officer-civilian communication in these traffic stops using AI models that emphasize fairness, responsibility, and unbiased assessment?" - LA Police Board of Commissioners

Aims

- Increase Police Transparency and Accountability
- Investigate Bias in Police Communication
- Develop Multi-Perspective Multimodal ML Model
- Develop Open Source Tools

Our Team

4 universities
8 professors
14 graduate students
~40 annotators



- **Partnerships**
 - LA Police Board of Commissioners, LAPD Office of Constitutional Policing, Homeboys Industry, Police Misconduct Registry, Social Innovation and Equity Research Institute

Study Phases



- Phase 1:** Stakeholder-Defined Metrics of "Good" Communication
- Phase 2:** Annotation of ~2k videos
- Phase 3:** Multimodal, Multi-Perspective, ML Models
- Phase 4:** Analysis of ~30k Stops
- Phase 5:** Causes of "Good" Communication & (De)escalation
- Phase 6:** Public release of new tools

Human-Centered AI Bias Mitigation From the Ground Up

PRE

- **Researcher Perspective Diversity**
- **Stakeholder Defined Metrics of Good Communication**
 - +60 Qualitative Interviews, +2.5k Survey, Police Trainings
- **Diverse Curation of Training Data**
 - By Neighborhood, Time, Search Oversample
- **Strategic Annotator Pool Diversity**
 - Diversity Informed by Perspective Variance
 - Race, Age, Experience w/ Police
- **Annotation Manual**
 - ~75 Variables Measured
 - Descriptive Bank of Terms + Sources



PERI

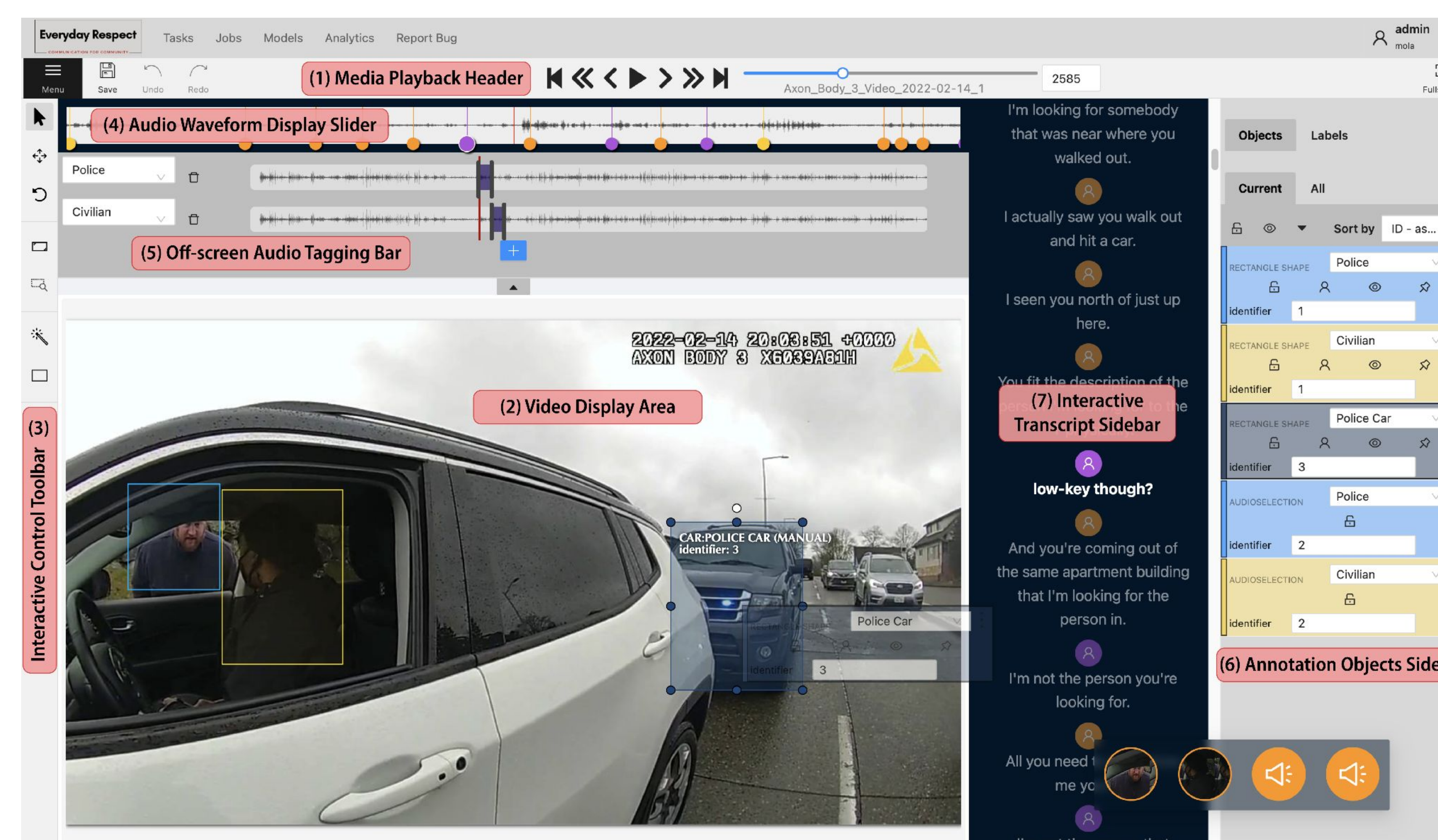
- **Annotator Training**
 - Unified Concepts + Preserving Perspectives
- **Annotation Process**
 - Transcription Correction, Identity Tags, Objective Labels, Subjective Ratings
- **Annotator-in-the-loop**
 - Refinement, Quality Assessment, Traumatic Exposure Monitoring

POST

- **Annotation Platform Accessibility**
 - Accessible UX/UI Design + Open Source
- **Annotator Disagreement on Subjective Analysis**

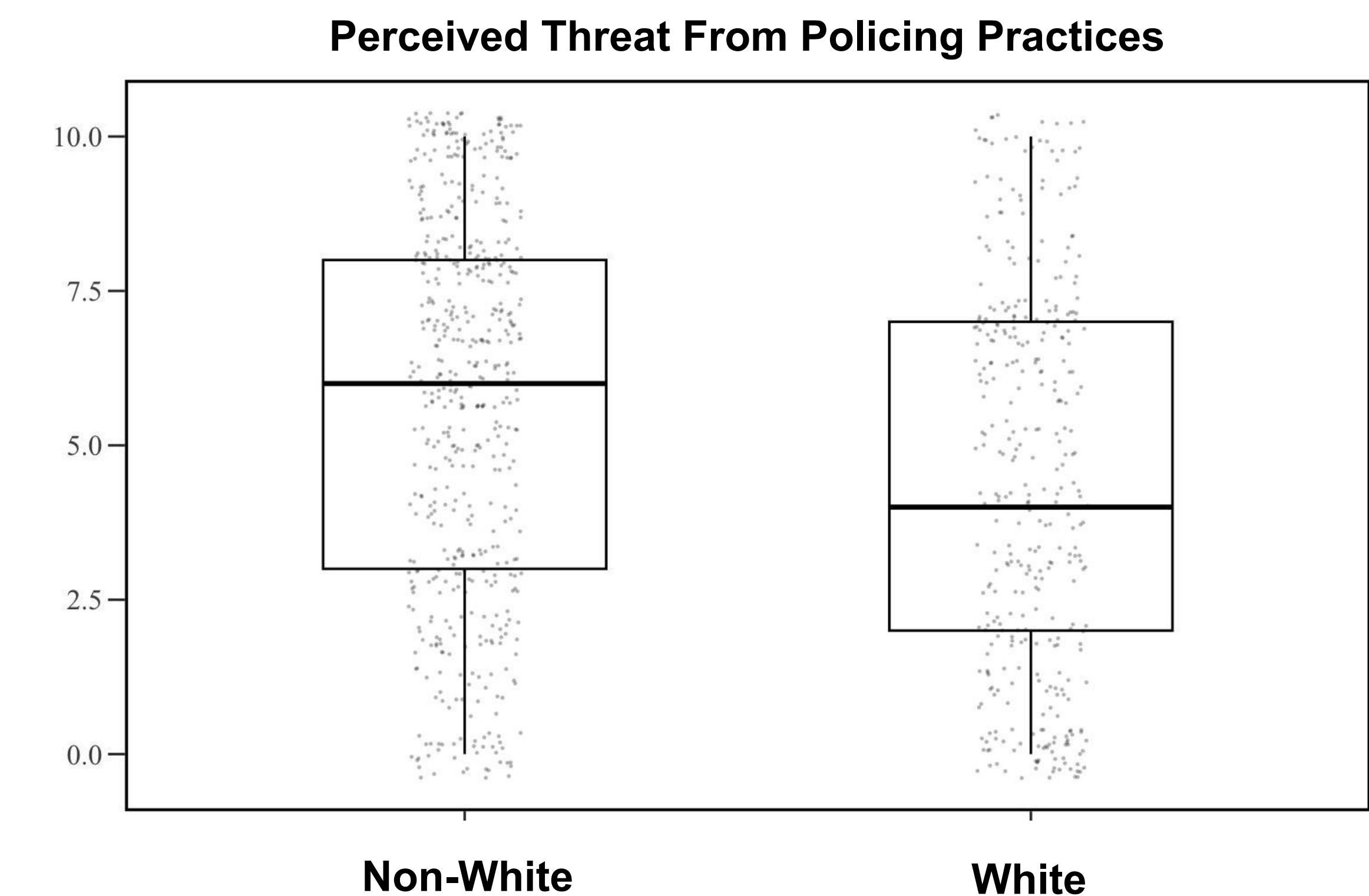
Custom Annotation Platform w/ Multimodal AI Tools

- **Privacy**
 - Local Hosting
 - Secure Server
- **AI Tools**
 - ASR + Diarization
 - Object Detection
 - Face Recognition
- **Features**
 - Fixing Transcripts
 - Identity Labeling
 - Custom Measures
 - Admin UI
- **Open Source**



Analyses

- **Fine-tuned ASR models**
- **Object-detection Analysis**
- **Training NLP Models Using Soft-labels**
- **Correlational Analysis**



Outcomes and Implications

Psychology

- Similar Preferences vs Varying Experiences & Perceptions
- Fear and Anxiety are Potent in Certain Communities

Technology

- Improvements to Noisy BWC Egocentric AV Analysis
- Multi-perspective Models of Subjective Ethical Variables
- Annotation Platform

Society

- Quantifying Society - Sociotechnical Systems
- Policy and Training Assessment
- Fair and Responsible AI

How to Get Involved

- Tools
 - Open-source Platform
 - Annotation Guideline
 - Public Video Corpora



See more: [Jacksonptrager.com](https://jacksonptrager.com)

