

# ZEMBRA PFE BOOK

Project Opportunities 2026

## Data Collection Innovation

Turning internet into a database, unleashing growth potential for online reputation management businesses.



## ABOUT US

# Who We Are

Zembra is a diverse collective of thinkers and doers focused on helping online reputation management businesses grow.

Zembra helps online reputation management businesses grow using a **robust review scraper API**. We turn the internet into a database, unleashing a large potential for growth and product value.

Over the last **5 years**, we've built an innovative data collection solution and currently serve **100+ businesses**. Our community benefits from our expertise in web scraping and data collection.



# 5+

YEARS OF  
EXCELLENCE



# 100+

BUSINESSES  
SERVED



# API

ROBUST  
SCRAPER  
PLATFORM

# Rewrite Proxy Framework

Modernize infrastructure by migrating from PHP to Python for enhanced performance

## 🎯 Project Objective

Complete architectural migration of existing proxy system from PHP to Python, optimizing performance, maintainability, and scalability for enterprise-grade data collection operations.

## 📋 Key Challenges

Preserve all existing functionality, ensure zero downtime during migration, optimize request handling speed, and implement robust error handling.

## 🚀 Expected Outcomes

Enhanced performance, easier maintenance, better scalability, and improved developer experience for future feature development.

## </> Technology Stack

Python 3.10+

FastAPI

Django

Redis

Docker



## Profile Required

Engineer or Bachelor degree in Computer Science

# Reverse-Engineered LLM Interaction Models

Leverage and analyze AI platform responses for structured intelligence extraction



## AI-Powered Scraping

Design and implement intelligent web scraping models powered by ChatGPT and LLM technologies for dynamic content extraction.



## Core Features

- Deep analysis of LLM response behavior, structure, and reasoning patterns
- Reverse-engineered interaction strategies to elicit targeted, high-value outputs
- Adaptive prompt and interaction optimization based on model feedback loops
- Scalable orchestration for high-volume AI platform interactions



## Tech Stack

NestJS

Laravel

ChatGPT

Web Scraping

MySQL

Redis



## Engineer / Bachelor Profile

Engineer or Bachelor degree in Computer Science

# Automate Social Network Scraping

Build automated data collection system for Facebook platform



## Platform Target

Develop robust automation tools to collect data from Facebook, including posts, comments, profiles, and engagement metrics while respecting platform policies.



## Core Features

- ✓ Automated scraping workflows with scheduling
- ✓ Rate limiting and anti-detection mechanisms
- ✓ Data validation and quality cleaning
- ✓ Real-time collection and monitoring



## Tech Stack



PHP



Laravel



MySQL



Scraping



Redis



## Engineer / Bachelor

Engineer or Bachelor degree in Computer Science

# AI Voice Transcription & Emotional Intelligence System

Develop an AI-driven voice transcription and emotional analysis engine with real-time processing capabilities



## Core Features

- ✓ Multilingual speech-to-text modeling across diverse accents and dialects
- ✓ Emotion and sentiment detection from vocal patterns and prosody
- ✓ Real-time and batch transcription pipelines
- ✓ High-accuracy inference through model optimization and fine-tuning
- ✓ Continuous learning from feedback and evaluation loops



## AI Integration

Develop an AI-driven voice transcription and emotional analysis engine that processes audio input and outputs highly accurate, language-aware transcripts enriched with emotional context. Mobile integration (e.g., React Native) is secondary and treated as a thin client.



## Tech Stack

### AI / ML

Speech-to-Text

LLMs

### AUDIO & NLP

Signal Processing

NLP Pipelines

### BACKEND & DATA

Python

Model APIs

Data Pipelines

### ML FRAMEWORKS

TensorFlow

PyTorch



## Required Profile

Engineer or Bachelor degree in Computer Science

# AI Analyzer for Slack Channels

Intelligent alert management and analytics for team communication



## Slack Integration

Collect, analyze, and manage alerts from multiple Slack channels using AI-powered intelligence for real-time monitoring and action.



Multiple Channels



Real-time Sync



## AI-Powered Analysis

- ✓ Automated alert categorization
- ✓ Sentiment analysis of messages
- ✓ Pattern detection & insights
- ✓ Smart notification routing



## Tech Stack

ReactJS

NestJS

AI/ML

TypeScript



## Key Features

- Multi-channel support
- Alert aggregation dashboard
- Historical data analytics
- Custom notification rules

## Required Profile

Engineer or Bachelor degree in Computer Science

# Captcha Solver using AI

Advanced automated captcha solving with Computer Vision and LLM technologies



## Intelligent Recognition

- Text-based captchas
- Image recognition
- Pattern analysis
- Real-time processing

Develop AI-powered system to automatically solve various types of captchas using advanced computer vision and object detection algorithms.



## AI Integration

Leverage large language models (LLM) combined with computer vision techniques for accurate captcha recognition and solving capabilities.



## Tech Stack

AI/ML

Computer Vision

Object Detection

LLM

Python

TensorFlow



## Required Profile


Engineer or Bachelor degree in Computer Science




TECHNOLOGY STACK


# Our Tech Stack


A comprehensive ecosystem of modern technologies powering our innovative solutions.





### PHP Backend

PHP 8


Laravel


Nginx

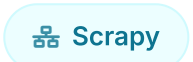
MySQL

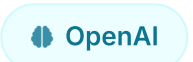



### Python Ecosystem

Python 3

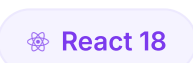
Flask


Scrapy


OpenAI




### React JS


React 18


Redux




### React Native


React Native


Expo




### NestJS


NestJS


TypeORM




### AI & LLM

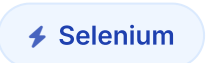
ChatGPT


Whisper



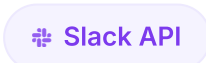
### Web Scraping

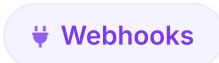
Puppeteer

Selenium



### Integration

Slack API

Webhooks

WHY JOIN US

# Benefits

Grow your career with cutting-edge technologies and impactful projects.



## Innovation at Scale

Work on a robust data collection solution serving 100+ businesses with 5 years of proven success.



## Diverse Collective

Join a team of passionate thinkers and doers committed to transforming the online reputation management industry.



## Growth Impact

Help businesses grow by turning the internet into a database and unleashing untapped product value.



## Cutting-Edge Tech

Work with AI, LLM, web scraping, and modern frameworks like React Native and NestJS.



## Data-Driven Vision

Be part of a mission to revolutionize how businesses leverage online data for reputation management.



## Real-World Projects

Apply your skills to solve complex challenges in voice transcription, social scraping, and AI analytics.

JOIN OUR TEAM

# How to Apply

## Send Your Application

EMAIL ADDRESS

[mourad@zembratech.com](mailto:mourad@zembratech.com)

- 1 Prepare your CV and relevant project portfolio
- 2 Include a brief cover letter explaining your interest
- 3 Specify which PFE project you're applying for
- 4 Send your application to the email above

# Ready to Innovate?

Join our diverse collective of thinkers and doers. Transform data collection with AI and modern technologies.



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<https://zembratech.com>



[zembratech.com](https://zembratech.com)