

Brewen Couaran

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M.Sc. Computer Science student at TU Delft (exp. Jun 2027) with production experience building autonomous web agents, developer tooling, and full-stack AI systems. Seeking software engineering or ML/AI engineering internship roles where I can ship backend-heavy, user-facing products at scale.

Education

M.Sc. Computer Science, *Delft University of Technology (TU Delft)*

Sep 2025 – Jun 2027 (exp.)

Delft, Netherlands

- ComMA Committee Secretary, W.I.S.V. ‘Christiaan Huygens’; member of ESN Delft and DISS.

B.Sc. Computer Science, International Track, *University of Bordeaux*

Sep 2022 – Jul 2025

Bordeaux, France

High Honors

- Exchange year at Hanyang University, Seoul, South Korea (Sep 2024 – Jul 2025) — GPA: **92.3 / 100**.
- Member of HY-CoRA Programming Club and MultiCultural People’s Club (MCPC).

Experience

Research Intern

May 2024 – Jul 2024

Laboratoire Bordelais de Recherche en Informatique (LaBRI) — Progress team

Bordeaux, France

- Designed and built **WebWisp** (github.com/brewcoua/webwisp), an end-to-end autonomous web agent: NestJS orchestrator dispatching tasks via **RabbitMQ** to scalable Playwright/Chromium workers driven by **GPT-4o**, with a React client for real-time task monitoring and a MongoDB + GCS persistence layer.
- Authored **web-som** (github.com/brewcoua/web-som), a Set-of-Marks grounding script using R-tree spatial indexing, Intersection Observer, and per-pixel OffscreenCanvas visibility scoring to annotate interactive DOM elements for multimodal LLM consumption — enabling **Multimodal Chain-of-Thought** prompting (screenshot + URL + action history) as the agent’s decision loop.
- Collaborated with **Smartesting** on web grounding integration; benchmarked against the VisualWebArena dataset; supervised by Xavier Blanc (director, LaBRI).

Developer Intern

Jun 2023 – Aug 2023

Packmind (prev. Promyze)

Bordeaux, France (Hybrid)

- Designed and shipped a **role-management system** (TypeScript + React) spanning six VCS platforms (GitHub, GitLab, Bitbucket, Azure DevOps — SaaS & self-hosted), unlocking enterprise repository integration tiers for customers.
- Built a **Git diff aggregation engine** with a custom heuristic-weighting algorithm to filter noise (whitespace, trivial refactors) and surface only high-signal code changes, directly reducing false-positive review requests.
- Integrated OpenAI APIs on top of the diff engine to ship **one-click semantic code review**, enabling automated analysis on any targeted code segment.

Projects

Household AI Agent

Prosus AI Hackathon 2025 — 24 h build github.com/Yuyabre/Yuyabre

- Built a full-stack AI agent platform: **tool-calling LLM architecture with ~15 domain-specific tools**, real-time agent streaming via WebSocket in a React chat UI, and per-user inventory with async caching and MongoDB persistence.
- Integrated Splitwise OAuth, Discord webhooks, and Twilio WhatsApp for household coordination; shipped Docker Compose deployment and a standalone Rich CLI demo.

Texture Classifier

github.com/brewcoua/texture_classifier

- Designed a modular **deep learning framework** in PyTorch, benchmarking custom Residual CNNs against transfer learning baselines (EfficientNet, ResNet) to identify optimal architectures for texture classification.
- Implemented a custom feature-enhancement classification head and data augmentation pipelines (Gaussian blur, colour jitter), systematically optimising fine-tuning accuracy.

JB

github.com/brewcoua/jb

- Rust CLI for full JetBrains IDE lifecycle management: versioned installation, configuration sync, and automated updates — eliminating manual toolchain overhead.

Skills

Languages	Python 3, Rust, TypeScript/JavaScript, Java, C, Bash, SQL/PostgreSQL
ML & AI	PyTorch, TensorFlow, LLM/agent engineering, Multimodal CoT, RAG
Frameworks	React, Next.js, NestJS, FastAPI, Express, Actix, Playwright
Cloud & Ops	AWS (EC2, S3), GCS, Docker, Kubernetes, Helm, RabbitMQ, MongoDB, CI/CD

Languages

French	Native
English	Fluent (spoken, written)
Korean	Intermediate (exchange year, Hanyang University, Seoul)