Uma **Zalakain**

COMPUTER SCIENTIST · SOFTWARE DEVELOPER

Glasgow

✉ ping@umazalakain.info | 🏠 umazalakain.info | Ⓞ umazalakain

Research Interests

- Programming language theory, type theory, abstract algebra, category theory.
- Formalisation of theories and construction of machine verified problem solvers

Academic Qualifications

University of Glasgow — *Glasgow*
MSc COMPUTER SCIENCE — *2018 - present*

University of Strathclyde — *Glasgow*
BSc HONS COMPUTER SCIENCE — *2014 - 2018*
First class honours. Awarded Andrew McGettrick prize for **outstanding performance**.
Thesis title: Evidence providing problem solvers in Agda.
Supervisor: Conor McBride.

Professional Experience

GISA Elkartea — *Errenteria*
DEVELOPER & ASSOCIATE — *2010 - present*
- Non-profit organization for the promotion of **libre software** and the translation of software to Basque
- Developed multiple libre web applications for a local radio station
- Translated multiple libre Android applications to Basque

TextLab — *Glasgow*
WEB DEVELOPER & TEXT ANALYST — *2016 - 2018*
- Joint research project between the English and Computer Science departments at Strathclyde, see `http://losp.us/`
- Developed a small Haskell library that parses and analyses the TEI-encoded texts provided by the Folger Shakespeare Library
- Developed an evolving static website that publishes the analyses carried out together with English students
- Collaborated in meetings with the staff from the Folger Shakespeare Library in Washington, D.C.

A2H Software Factory — *Donostia*
SOFTWARE DEVELOPER — *2014 - 2016*
- Developed small web applications for internal company usage
- Developed a content publishing system focused on third-party integration
- Developed a data extraction and visualization library

University of Strathclyde — *Glasgow*
LAB DEMONSTRATOR — *2017*
- Demonstrated User and Data Modelling labs
- Demonstrated Programming Foundations
- Received enthusiastic **positive feedback** from students

Honors & Awards

2018	**Andrew McGettrick prize for outstanding performance**, University of Strathclyde (**£400**)	*Glasgow*
2017	**Best overall third year student**, Baillie Gifford (**£200**)	*Glasgow*
2014–2017	**Dean's Certificate for excellent results**, University of Strathclyde	*Glasgow*
2014	**Winner of the Bloomberg challenge**, StrathHack	*Glasgow*

Skills

Programming	Haskell, Agda, Coq, Python, JS, Java, Rust, C, SQL, LaTeX
Sysadmin	NixOS & GNU/Linux administration, Bourne shells, Git
Web	Django, AngularJS, HTML5, LESS, SASS

Language skills

Basque	native language
Spanish	native language
English	fluent (speaking, reading, writing)
Dutch	intermediate (speaking, reading); basic (writing)
Franch	basic (speaking)

Software Development

Presburger solver	verified solver for Presburger arithmetic in Agda
NetSim	simulator for synchronized periodic exchanges of distance vectors across a network
ADTrees	modelling and evaluation of attack-defense trees
Juktz	a statically typed imperative language and its interpreter
Lightweight-motion	RPi-ready motion detection for USB and HTTP(S) cameras
Nixpkgs	contributed with several packages
Django	contributed with several pull requests

Participation

2019	**Scottish Programming Languages and Verification Summer School**, attendee	*Glasgow*
2019	**Behavioural Approaches for API-Economy with Applications**, attendee	*Leicester*
2019	**MirageOS retreat**, participant	*Marrakech*
2018	**ICFP**, Programming Languages Mentoring Workshop attendee	*St Louis*
2016	**EuroPython**, attendee	*Bilbao*
2016	**Jornadas de Conocimiento Libre**, attendee and speaker	*Madrid*
2011	**Arrosa Sareko topaketak**, attendee and speaker	*Bergara*
2012	**Ud4kamp**, attendee and speaker	*Gernika*
2009-2013, 2018	**Hackmeeting**, attendee and speaker	*Spain*
2010-2013	**Lakaxita Hacklab**, participant, speaker, and organiser	*Irun*

Talks and Presentations

2018	**Intro to functional programming in Haskell**, inductive reasoning, functional composition	*Malaga*
2016	**GPG: Una introducción**, public key encryption, management of keys, web of trust, and keysigning	*Madrid*
2012	**El lado oscuro de Google**, raises awareness of the power handed over to organizations like Google	*Gernika*
2011	**Segurtasunera sarrera**, security tips for libre radios and grassroot movements	*Bergara*
2011	**Brief intro to Python**, for beginners	*Irun*
2011	**Django workshop**, for beginners	*Irun*