

# Andrew Towers

Phone: 0404 228 928  
Email: [atowers@gmail.com](mailto:atowers@gmail.com)  
Portfolio: <http://raffe.io/>

## I Believe

- Unexpected errors are for developers, not end-users.
- Things should be designed for an audience and their goals.
- Front-ends should not be turned into programmer code.
- The right tool is the one that gets the job done well.
- Reliable systems are simple, not *complected*.

## Skills & Experience

- **Front-end** HTML5, CSS, DOM, jQuery, Angular, browser quirks, IndexedDB, video.
- **Back-end** node.js, python, microservices, idempotence, REST, stateless.
- **Database** Postgres (good SQL, indexes), MongoDB (indexes, atomic ops)
- **Server** nginx, debian, iptables, systemd, ssh, rsync, vim, mtr.
- **AWS** S3, CloudFront, ELB, AutoScaling, Security Groups, IAM, CloudFormation.
- **Desktop** Win32 APIs, OS X apps, C/C++, Objective C, some Linux.
- **Mobile** iOS, IB and OpenGL; web video player quirks.
- **Low-level** OS design, hardware level, assembly language (ARM,x86)
- Data-oriented Design: CPU caches, branch prediction, game engines.
- Breaking things down into bits that can be readily understood and communicated.
- Iterating until simplicity is achieved, with regard to diminishing returns.
- Interest in: declarative, distributed, failure modes, security, usability.
- Quickly learning new tools and technologies.

## Employment History

### 2015 – now    GAME PROJECT, CONTRACT WORK, TRAVEL

Working independently on an unnamed project to develop a toolkit for independent games developers, making use of my low-level coding experience and familiarity with 3D APIs across Windows, Mac, Linux, iOS and WebGL. A mix of C/C++ engine, C++ and Objective C front-ends, tools and prototypes written in Lua and Javascript (node.js and in-browser with WebGL.)

Contract work on a retail web-site using node.js and postgres with PayPal integration. Front-end pages with jQuery and Angular designed by a 3rd-party - <http://www.beaverstail.com.au/> - and providing hosting: deployment, monitoring and ops services.

I have also spent some of this time travelling overseas.

### 2013 – 2014    SMALL WORLD SOCIAL

White-label CMS product with client web sites and mobile apps, used by corporate clients.

- Made the CMS "admin" front-end: Angular, Bootstrap, JS, HTML, CSS.
- MongoDB schema design for atomic update ops via idempotent REST APIs.
- Node.js REST APIs, schema validator, microservice glue library.
- Created client-side session/retry REST wrapper with login hook.
- Drag & Drop front-end to schedule on user's calendar, Google Calendar API.
- HTML5 video player for seamless white background on Android/iOS.
- Upload service: unzip, image & video thumbnails, MOOV optimization, S3.
- API for incremental content delta-updates to mobile clients.
- AWS: S3, CloudFront, ELB, AutoScaling, VPC, Security Groups, IAM, etc.
- Nginx config: micro-caching generated front-end pages, proxy-cache S3.
- DevOps: dev-server to sim nginx routing and run/restart microservices.
- Front-end scripting for designers' HTML-first designs.
- Security awareness: system passed 3rd-party penetration testing.

### 2011 – 2012    PANGUR

Python site using Jinja2 templates and a JS/jQuery front-end, using browser database features (IndexedDB, WebSQL) and SQLAlchemy with Postgres on the back-end. Included a custom forum within the site, and an in-browser document editor.

I worked on both front-end and back-end with one other team member. I wrote the browser storage and sync-to-server parts, document editing logic, forum pages and database schema/queries, and some in-browser canvas rendering for document previews. The main site was server-side rendered, the document editor used REST APIs.

#### 2008 – 2010 FITNESS2LIVE / McKESSON ASIA PACIFIC

Python/Twisted web app with some complex calculations to model meal planning, activity and kilojoules consumed. I worked on many of the site features; it was a monolithic server-side rendering app. Company acquired by McKesson.

#### 2005 – 2007 TELSTRA RESEARCH LAB

C++ applications, Flash, HTML, Java; customer and technician install kits for Windows and Mac. Worked primarily on stand-alone executables that run without being installed (native Win32 APIs), a Flash layout engine with bindings to C++, integration with driver kits from 3rd-party vendors, 3G modem and home-WiFi-router configuration and control software.

#### 2002 – 2004 BLUESTAR GAMES

Game engine design and programming, tools programming. DirectX and Win32, C++, language interpreter implementation. Also some J2ME game development for early mobile platforms.

#### 1999 – 2002 DYTECH SOLUTIONS

Consulting firm. Multi-threaded C++ server code, Windows COM and DCOM, system architecture.

## Education History

1998	Bachelor of Computing, Honours 1st class
1995 – 1997	Bachelor of Applied Computing, minor in Electronics
1994 – 1995	Launceston College, Tasmania
1989 – 1992	Riverside High School, Tasmania

## Referees

### TIM STEBBING

All-around good guy. I have worked with Tim on a number of projects and jobs, and he has always been a great communicator and star player. Tim was the tech lead at Small World Social.

Phone: 0434 746 089  
E-Mail: [tim.stebbing@iflix.com](mailto:tim.stebbing@iflix.com)

### PAT OWENS

I nearly worked with pat on a startup he was involved in, but the startup kind of fell apart. Pat genuinely cares about the work he is doing and the people he is working with.

Phone: 0430 125 515  
E-Mail: [pat.owens@outlook.com](mailto:pat.owens@outlook.com)

### ADAM BRADY

Also a stellar chap, picks things up quickly and gets things done. Probably will be running the company he's at sooner or later.

Phone: 0468 548 924  
E-Mail: [adam@boxxen.org](mailto:adam@boxxen.org)