David Dudson

+64278690606
davidjohndudson@gmail.com
daviddudson.github.io
@BigDaveNz1

I am a cross-paradigm, performance driven, Scala/Java Software Developer who specializes in meta-programming. With a passion for learning new languages, paradigms and frameworks, I can adapt to any team. Excelling in both collaborative and independent environments, I write clean, maintainable code to ensure future organizational success.

Open Source

My occupation is also my hobby. I'm always looking for more ways to help the open source community. I will often write PR's for libraries, help to manage and report issues or assist with support on Gitter.

Scalagen – Author   Link

Scalagen is a work in progress code generation library for Scala. Scalagen can support any variant and version of Scala. I authored this library primarily because the existing scalameta/paradise library was deprecated and scalamacros/paradise is not ide or user friendly. I manage everything from issues to design and implementation.

Elysium - Author   Link

Elysium was an exploration of what could be accomplished with Macro Annotations, I also wrote a *macro to develop macros.* All Elysium macros are strongly typed and became the foundation of scalagen's API.

Scalameta – Maintainer   Link

A huge center point for Scala's tooling. Exists primarily as an AST for the Scala language. I am the co-author of the scalameta-contrib module, built to simplify interactions with scalameta.

Scalameta/Paradise - Maintainer   Link

Macro library for Scala. Now deprecated in favor of scalameta/scalagen (Annotation Macros) and scalacenter/macros (Def Macros). I wrote a large portion of the annotation processing logic, to ensure feature parity with scalamacros/paradise.

Experience

Software Developer - Electric Memory IT 2015 - PRESENT

Contracted to: Process System Enterprise, London, England
EMIT Office Location: Palmerston North, New Zealand
Languages: Java/Scala

I have been a part of many projects at PSE/EMIT. They have challenged me and allowed me to grow as a developer.

NEW LANGAUGE ENGINE

Using Antlr4 as our parser and lexer, with Scala as the language of choice, I collaborate in a team of three to build a fast, immutable, threadsafe and storage efficient language module. I wrote most of the Antlr grammars, the parsing logic and a large portion of the language model. The rest of the team worked on integration with existing code.

- Antlr4
- Antlr2
- Scala
- Java
- C++

MAVEN TO GRADLE MIGRATION

I led the Gradle migration project. Our build system is rather complex, we have multiple code generation steps, multiple JVM languages being used, extra post-compile tasks (obfuscation and encryption) and multiple repositories. The build was designed to be modular via Gradle plugins. I had to manage many other people, other developers, our CI team, our Kernel team. The build had to run fast and support both windows and Linux.

- Groovy
- Gradle
- Java

FLOWSHEET ROUTING

Flowsheet routing is the act of ensuring the connection between nodes on a flowsheet are orthogonal. For user-generated projects this could happen on project load and could trigger up to 8 hour GUI freezes. I moved all routing calculation off the event dispatch thread (Swing's GUI thread), made them async, and ensured all routing actions would be undoable, parallelizable and cancellable.

- Swing
- Java
- Threading

Salesman - Dick Smith Electronics   2014-2015
Location: Palmerston North, New Zealand

Butchers Assistant - Countdown Supermarkets   2012-2013
Location: The Valley, New Plymouth, New Zealand

Checkout Operator - Countdown Supermarkets   2009-2012
Location: The Valley, New Plymouth, New Zealand

Fruit Harvester - Paradise Valley Berry Farm   2008-2009
Location: Bell Block, New Plymouth, New Zealand

Technical

Operating Systems

I am experienced with all 3 major operating systems. Linux, OSX and Windows. I am most experienced with Linux, primarily NixOS, and Ubuntu.

Version Control

I use git for version control. I am competent with git and have written many programs interacting with Git repositories. I am familiar with git-flow.

Languages, Libraries and Skills

SCALA

I have 6 years Scala experience, 2 and a half in industry. I have given talks and workshops on Scala. I am very knowledgeable on Scala and its ecosystem.

JAVA

I have 7 years Java experience, 2 and a half in industry. I am very competent with Java and the JVM, spending a lot of time profiling and optimizing at a very low level.

PYTHON

I have 5 years Python experience, with a small amount in industry. I use occasionally use Python for small web servers (Django or Flask) and command line tooling.

JAVASCRIPT

I've written a lot of Javascript, mostly during my time at university, I have experience ES5, ES6, Typescript and Coffeescript. I've also written code in AngularJS, Angular and React, using tools such as NPM, Bower, Gulp and Webkit.

CATEGORY THEORY

I recently learnt basic category theory. This helped me understand programming from a mathematical perspective. I wanted to develop an understanding the Free Monads and Natural Transformations. I still want to do far more research into this field.

FUNCTIONAL PROGRAMMING

I am learning more about functional programming all the time. I apply this knowledge to all programming fields, not just in functional programming languages.

TESTING

I'm competent with all testing and use different testing methods depending on the situation. My knowledge covers Unit testing, Integration testing, Interactive testing, Acceptance testing and benchmarking.

CODE REVIEW

I am experienced with code review, both on Github for reviewing pull requests, and Gerrit for internal code review.

IDE'S AND EDITORS

- Intellij IDEA
- Pycharm
- Webstorm
- VsCode
- Atom

Conferences

- Kiwicon X
- 2x Kiwi Pycon
- NZJSCon
- linux.conf.au 2018

Community

I attend as many talks and events as possible, via Massey University, IT Professionals of New Zealand (ITPNZ) or the Palmerston North Software Development Meetup Group. Once I have arrived in Cairns I will be joining IT Professionals Australia. I have also given a talk and workshop for Scala to around 30 people at the meetup group.

Education

Bachelor of Information Science/ Massey University

I completed my compulsories complete in 2015, and currently finishing electives 1 paper at a time while working.

A selection of results are:

- A+ in the 300 level Concurrent Systems paper
- A+ in the 300 level Capstone Project paper
  - Source is available at https://github.com/DavidDudson/Capstone
- A+ in the 300 level Special topic
  - Source is available at https://github.com/DavidDudson/FarmManagement

References

Personal phone numbers for references available on request

Duane Griffin

Relationship: Cofounder of Electric Memory IT
Location: Palmerston North, New Zealand
Timezone: New Zealand Standard Time (NZST - UTC+13)
Email: duaneg@psenterprise.com

Luke Usherwood

Relationship: Cofounder of Electric Memory IT
Location: Hungary
Timezone: Central European Time (CET - UTC+1)
Email: lukeu@psenterprise.com

Andrew Bevan

Relationship: Head of Software Development, Process Systems Enterprise
Location: London, England
Timezone: Greenwich Mean Time (GMT - UTC+0)
Email: andrewb@psenterprise.com
Phone: +44 20 8563 0888

Steven Carpenter

Relationship: Ex Manager of Dick Smith Palmerston North
Location: Palmerston North, New Zealand
Timezone: New Zealand Standard Time (NZST - UTC+13)