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| 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](https://github.com/scalameta/scalagen)

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](https://github.com/daviddudson/elysium)

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](https://github.com/scalameta/scalameta)

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](https://github.com/scalameta/paradise)

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

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## Luke Usherwood

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## Andrew Bevan

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## Steven Carpenter

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