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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.

# Technical

## Languages, Libraries and Skills

### **Scala**

I have 6 years Scala experience, 2 and a half in industry. I have given a talk and follow-up workshop on the language at the local Software Development meetup group.

### **Java**

I have 7 years Java experience, 2 and a half in industry. I am a competent OO developer and have spent a lot of time profiling the JVM and optimizing low level code.

### **Python**

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

### **Javascript**

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

### **Category theory**

I recently learnt basic category theory which helped me understand programming from a mathematical perspective. I learnt about various abstractions such as Kliesli Arrows, Free Monads and Natural Transformations.

### **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. It has helped me to produce clean reusable pieces of code with a clear separation of behavior, data and effects.

### **Testing**

I’m competent with all testing and use different testing methods depending on the situation. My knowledge covers unit, integration, interactive and acceptance testing, as well as 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

## Operating Systems

I primarily use Linux (NixOS or Ubuntu), but also have experience in Windows and OSX.

## Version Control

I am a competent git user and have written many programs interacting with Git repositories. I am also familiar with git-flow and use advanced git techniques to ensure my history is clean and can be effectively analyzed later.

# Open Source

My occupation is also my hobby, in my free time I contribute to the open source community. I often write PR’s for libraries, assist with support on Gitter and help with issue management.

## Scalagen – Author [Link](https://github.com/scalameta/scalagen)

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. 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 which exists primarily as an AST manipulation library. 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 have written a large portion of the annotation processing logic used 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 Scala for AST and validation logic, and Antlr4 as our parser and lexer, I collaborate in a team of three to build a fast, immutable, threadsafe and storage efficient language module. I have written most of the Antlr grammars, the parsing logic and a large portion of the language model. Whilst the rest of the team worked on integration with existing code.

* Scala
* Antlr4
* Antlr2
* 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 other developers such as the CI and Kernel teams. The build had to run fast and support both Windows and Linux.

* Gradle
* Groovy
* 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 the route calculations off the event dispatch thread (Swing’s GUI thread), ensuring asynchronous execution. I also altered all routing actions so they would be undoable, parallelizable and cancellable.

* Swing
* Java
* Threading

## Salesman - Dick Smith Electronics 2014-2015

Palmerston North, New Zealand  
Part time

## Butchers Assistant - Countdown Supermarkets 2012-2013

The Valley, New Plymouth, New Zealand  
Part time

## Checkout Operator - Countdown Supermarkets 2009-2012

The Valley, New Plymouth, New Zealand  
Part time

## Fruit Harvester - Paradise Valley Berry Farm 2008-2009

Bell Block, New Plymouth, New Zealand  
Seasonal

# Conferences

I enjoy furthering my knowledge through research and conferences, allowing me to communicate new ideas to my team for possible implementation. In the past I have given a lightning talk at KiwiPycon, which is my way of contributing to the community. I also enjoy networking with a variety of like-minded people from all IT backgrounds.

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

# Community

I attend as many talks and events as possible. In the past I have gone to events organized by Massey University, IT Professionals of New Zealand (ITPNZ) and the Palmerston North Software Development Meetup Group.

# Education

## Bachelor of Information Science/ Massey University

I completed my compulsory papers in 2015, and currently finishing electives by distance.  
  
Project papers:

* Capstone Project
  + Source is available at <https://github.com/DavidDudson/Capstone>
* Special topic
  + Source is available at <https://github.com/DavidDudson/FarmManagement>

# References

## Duane Griffin

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

## Luke Usherwood

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

## Andrew Bevan

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