



Josh Garry  
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(61) 492 877 393



Online Portfolio



Bachelor of Engineering



Dissertation

# Joshua Garry

## Mechanical Engineer

**About Me** I am a mechanical engineer (bachelors with honors) with 2 years working experience in the mining industry. I am a product designer, draftsman, ERP coordinator, production planner and (occasionally) estimator. I have a focus on familiarizing and understanding the Australian Standards, working closely with boilermakers, fitters and suppliers to develop products, meet projection deadlines and refine internal process. For more sample of work see my [portfolio](#).

## Education

2018 – 2023, [University of Southern Queensland](#)  
Bachelor of Engineering Honors (Mechanical)

2014 – 2017, [Toowoomba Christian College](#)  
High School

## Experience

[July 2023 - Present, Mechanical Engineer, Field Mining Services Group](#)

Key responsibilities:

- Design and develop new products to meet the requirements of clients, FMS and Australian Standards. Typically subject to:
  - AS 4100 Steel Structures
  - AS 3990 Mechanical Steelwork
  - AS 4991 Lifting Devices
  - AS/NZS 5131 Structural Steelwork
  - AS 1657 Fixed Platforms, Walkways, Stairways and Ladders
  - AS/NZS 1170 Parts 1 & 2 Structural Design Actions
  - AS/NZS 1554 Parts 1, 3, 4 & 6 Structural Steel Welding
  - National Transport Commission Load Restraint Guidelines
- Drafted designs using 2D & 3D CAD software such as SolidWorks, Inventor & AutoCAD for manufacture.
- Analyzed designs using hand calculations, FEA software such as Ansys Structural & Inventor's FEA.
- Documented engineering calculations and FEA results to assist with RPEQ certification, as well as produce letters of certification and plaques.
- Used in house or 3rd party 3D scanning for reverse engineering of components and structures.
- Created and processed Purchase Orders for heavy machinery repair materials according to Scope of Work requirements, including excavators, rope shovels, dragline buckets, dozer blades, and track frames.
- Produced Job Packs and work order documents for submission to the production manager.
- Assist heavy and light fab estimators with preliminary drafting and calculations for tendering and quotation.
- Produced light fabrication quotes.
- Traveled to mine sites to assess and collect measurements for projects.
- Provided workshop floor support to assist with production challenges.



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Sync Motor Lifting Jig



Load Roller Change Out Jig



Workshop Experience

### Notable Projects:

- Designed a specialist lifting jig for dragline synchronous motor replacement that could be used with the onboard gantry cranes.
- Designed a low profile, low cost track frame load roller change out jig that reduced assembly time for excavator track frame overhaul.
- Designed a set of rail beam transport stands dual use as a double lifting arrangement for BHP's Hay Point coal terminal dump station.
- Reverse engineered a dragline heel shoe guide from the damaged original using in house 3D scanning.

### November 2020 - April 2023, Draftsman ERP Coordinator, Downs Sheet Metal and Janke Australia

#### Key achievements and responsibilities:

- Gained experience in design for
  - Sheet metal manufacturing
  - Heavy agricultural equipment
- Improved drafting skills such as;
  - In context modeling
  - File and database stability
  - Revisioning and standardizing
- Used Amada Sheetworks (a derivative of SolidWorks) extensively to remotely program an Amada press-brake.
- Used SolidWorks CAD/CAM to program produce Gcode for a Doosan milling machine.
- Set up Opto Manufacturing enterprise resource planning (ERP) software to order, allocate and keep track of materials, produce and track job tickets and provide accurate costing for products.
- Wrote the company standards document for drafting policy as well as engineering design. This document was/is used to train new employees in the practices that are now expected of draftsmen.
- Coded a graphical user interfaced tool to help code and decode internal company part codes to assist the drafting and manufacturing and sales teams. This was developed in Python, exported as an .exe installer and could be deployed on any Windows computer.
- Wrote, collaborated with external graphic designers and arranged for printing of capability statement for DSM in time for a trades show. This is a 12 page document effectively communicating DSM's strengths and competitive advantages for the purpose of increasing revenue with contract jobs.
- Developed a smart export program to deduce information about parts based on metadata as well as geometric markers as well as an import program to enter data into ERP software. This minimizes turnover time between having a finished CAM model and complete automated ERP setup.
- Completed sub-contracted design work for a client where existing designs needed to be integrated into a final version. This also had manufacturing constraint due to the fabricators chosen to make the design. This work resulted in 10k worth of billing for Janke.



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Code Tool



Capability Statement



UAV Challenge

## 2015 – 2020, Trades Assistant, Bettabuilt Fabrication

Worked in many holidays through high school in the workshop assisting boilermakers. In this time I am grateful to have gained skills in;

- Welding
  - MIG DC and pulse
  - stick
- Fabricating (tacking out)
  - beam and rafter assemblies
  - roller door tracks
  - railings

## CAD Software Skills

- SolidWorks
- Solid Edge
- Advance Steel
- Sketchup
- Sheetworks
- Inventor
- FrameCAD
- Blender
- PTC Creo
- AutoCAD
- Revit

## Software Development Skills

### Languages

- Python
- Gcode
- Matlab
- LaTeX ...this document
- VBA

### Frameworks

- Tensorflow (Machine Learning)
- PyQt (User Interface Design)
- PythonCOM (Application APIs; SolidWorks)
- Pandas (Data Science)
- Git (Version Control)

## Presentations

### Drafting Presentation USQ

Presentation a 30 minute talk to the solid modeling class at USQ. The talk focused on my experience working in a drafting role with an emphasis on the legal aspects and ramifications of producing drawings for subcontracting.

## Awards

### 2017, UAV Aerial Recovery Challenge

Joint team winner of the international UAV aerial recovery high-school challenge (\$5500 winnings).

### 2016 - 2017, Mechatronics Award, High-School

Won the school Mechatronics award, consecutively (years 11 & 12).

## Interests

- Road Bikes
- Brewing
- Scuba Diving
- FPV Drones



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## References

[Micheal Samson \(+61\) 421 854 113](#)

Workshop Planning and Estimation Manager at FMS Group

[Dr Khalid Saleh \(+61\) 4064 999 24 Khalid.Saleh@usq.edu.au](#)

Professor (Mechanical Engineering) and lecturer at USQ

Taught me Solid Modeling, programming with Matlab and Advanced Thermodynamics.

[Dr Tobias Low \(+61\) 7 4631 1714 Tobias.Low@usq.edu.au](#)

Professor (Mechatronic Engineering) and lecturer at USQ

Taught me Mechatronics & Automation, Robotics & Machine Vision and supervised my Final year Project.

[Dr Craig Lobsey \(+61\) 7 4631 1322 Craig.Lobsey@usq.edu.au](#)

Professor (Mechatronic Engineering) and senior lecturer at USQ

Taught me Mechanical and Mechatronic System Design

[Michael Pearson \(+61\) 429 623 219](#)

Owner of Janke Australia and Downs Sheet Metal

[Kerrod Lane \(+61\) 478 096 662](#)

Workshop Manager at Bettabuilt

[Felix Lallon \(+61\) 42 477 5446](#)

Boilermaker at Bettabuilt