

JOSHUA D. MCGRAW

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Programming Portfolio: www.JoshuaMcGraw.com

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Research Scientist with machine learning, protein bioinformatics, data visualization, programming, and pharmaceutical laboratory experience. Highly organized, focused, and detailed individual with a diligent work ethic.

PROFESSIONAL EXPERIENCE:

2019 – 2020

Indy Audio Labs
Indianapolis, IN
Title: Software Developer

Responsibilities:

- Developed hardware-specific drivers in Lua, expanding product scope into home-automation markets.
- Developed a C# Windows Forms Sound EQ application, providing additional utility and value to existing clients through automated setup configuration.
- Collaborated alongside other engineers to solve complex design problems.

2016 – 2017

Eli Lilly & Co.
Indianapolis, IN
Title: Research Scientist

Research Foci: Large Molecule laboratory focused on development and optimization of several *E. Coli* - based human insulin production pipelines.

Responsibilities:

- Performed transformation reactions on *E. Coli*-based human pro-insulin
- Isolated non-related substances from transformation products with HPLC and UPLC
- Developed lab tools and analytical visualization software in Python
- Prepared and maintained detailed records of laboratory experiments
- Presented experimental progress with supervisors and colleagues
- Performed various other experimental methods which assisted the company

Two analytical tools were personally developed to increase productivity of the lab:

- Expower: Exported, transformed, and graphed HPLC results into Excel. Each execution saved a minimum of 2 hours of manual data transcription.
- MPeak: Resolved, located, and identified related substances from HPLC and Mass Spec Data using known peptide masses. The value of this software was estimated up to a \$1,000,000 license.

EDUCATION:

- 2020 – Current** **Indiana University**, Bloomington, IN
Luddy School of Informatics – PhD – Interactive and Intelligent Systems
- 2019 – 2020** **Indiana University – Purdue University Indianapolis**, Indianapolis, IN
School of Informatics – Master of Science – Applied Data Science
- 2012 - 2016** **Purdue University**, West Lafayette, IN
School of Science – Bachelor of Science – Microbiology
Minor in French Language and Culture

ACADEMIC EXPERIENCE:

- May 2020 – Current** **Building a Mind Lab, Indiana University**
Dr. Justin Wood, PhD
Title: Graduate Researcher
- Research Foci: Developing a state-of-the-art virtual rearing chick-rearing chamber to study emerging developmental properties.

- May 2015 – 2016** **Protein Sequence Analysis, Purdue University**
Dr. Daisuke Kihara, PhD, Bioinformatics
Title: Research assistant
- Research Foci: Developing a research-based algorithm to sort multiple sequence alignments via an alternate scoring method.

Responsibilities:

- Research experience in Bioinformatics, focusing on protein structure and cellular function.
- Python Programming and data analysis
- Reviewed and edited research manuscripts before publication
- Attended weekly literature reviews

Publications:

- **"MPFit: Computational Tool for Predicting Moonlighting Proteins"**
Ishita Khan, Joshua McGraw, Daisuke Kihara
- **"Using PFP and ESG Protein Function Prediction Web Servers"**
Qing Wei, Joshua McGraw, Ishita Khan, Daisuke Kihara

REFERENCES:

- **Dr. Warren MacKellar (Senior Research Fellow, Eli Lilly & Co.)**

1555 S Harding St, Indianapolis, IN 46221
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- **David. B. Baldwin (Supervisor, Research Scientist, Eli Lilly & Co.)**

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- **Dr. Daisuke Kihara, PhD. (Professor of Computer Science, Purdue University)**

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