

## CONTACT

✉ kmnsiemp@uwaterloo.ca

📞 Botengu

in Ken Nsiempba

☎ +1 (514)-806-1410

## SKILLS

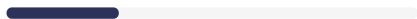
Python



C#



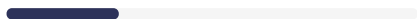
C++



Java



R



Matlab



HTML



CSS



Microsoft Office



Solidworks



Rhino3D



Blender



Autodesk Inventor



Grasshopper3D



# KEN M. NSIEMPBA

*I use code to render shapes and  
I use shapes to visualize data*

## WORK EXPERIENCE

**Data engineer and scientist**

**Sunnetgroup Canada, Montreal, Quebec, Canada**

**May '22 - Present**

- I use innovative methods to automatically extract data from scanned PDF documents
- I extract patterns and trends using this data
- I use tools like PowerBI and python libraries to visualize trends

**Computational Designer**

**Podform3D, Montreal, Quebec, Canada**

**Sep '21 - Apr '22**

- Modeled medical orthotics parametrically using Rhino3D and Grasshopper3D
- Developed an end-to-end design algorithm to go from a scanned patient's foot, as a point-cloud, to a finished medical orthotic represented by an extruded parametric surface
- Used **machine learning** tools such as **principal component analysis** to smartly reorient the scans of patients' feet
- Integrated features required by customers on a frequent basis

**Research Associate**

**University of Waterloo, Waterloo, Ontario, Canada**

**Feb '21 - Feb '22**

- Reduced the weight of a golf club by implementing topological optimization and latticing
- Created a design of experiment to study the manufacturability of metal samples as a function of geometrical parameters
- **Developed statistical models** to predict the manufacturability of 3d printed parts partly by **plotting and visualizing** surface roughness as a function of a sample's thickness and overhanging angle
- Directed and supervised the writing of scientific articles
- Oversaw the 3D printing of items and assisted the technicians in post-manufacturing processes

**Engineering Intern**

**Pratt & Whitney Canada, Longueuil, Quebec, Canada**

**May '17 - Dec '17**

- Generated resources to classify data about suppliers of 3D printing equipment/training to help employees better navigate the 3D printing industry
- Led meetings and supervised a team of designers to redesign parts for 3D printing
- Followed up on and ensured the completion of the redesigning process

## CERTIFICATIONS

### The Data Scientist's Toolbox

2022

Johns Hopkins University

### R Programming

2022

Johns Hopkins University

### Finance & Quantitative Modeling for Analysts Specialization

2022

University of Pennsylvania

## ACHIEVEMENTS

### Rapid+TcT Conference

2019

I was the second runner up for the poster challenge, winning a 250\$ (USD) prize in 2019

### CanadaMakes3D Challenge

2018

I was a finalist of the Canada Makes 3D challenge

## EDUCATION

### MASc - Mechanical & Mechatronics Engineering

University of Waterloo - Waterloo, Ontario, Canada

Sep '18 - Oct '20

Thesis' title: Coupled Experimentally-Driven Constraint Functions and Topology Optimization utilized in Design for Additive Manufacturing

### Bachelor - Mechanical Engineering

McGill University - Montreal, Quebec, Canada

Sep '13 - May '18

I specialized in computational/parametric design of mechanical parts and 3D printing

## PUBLICATIONS

### Geometrical Degrees of Freedom for Cellular Structures Generation: A New Classification Paradigm

Appl. Sci. 2021, 11, 3845

<https://www.mdpi.com/2076-3417/11/9/3845>

Apr '21

Status: Accepted and Published

## PROJECTS

### My personal website

Tool: Python, HTML, CSS, Ruby, JavaScript, Markdown

Sep '20

I developed a website using GitHub Pages to display my projects. The projects I have done have helped me reinforce my knowledge of python, and python libraries such as **matplotlib**, **numpy**, **math**, **scipy**, **skimage**, **visvis**, **sklearn**, **Tensorflow**, **scikit**, **yahoo finance**, **bqplot**.



### My 3D printer

Tool: Reprap kit

May '15

During my research internship, I was eager to learn about 3D printing technologies. I ordered the parts of a reprap printer (Prusa i3) and built it from scratch.