

Crown Identification

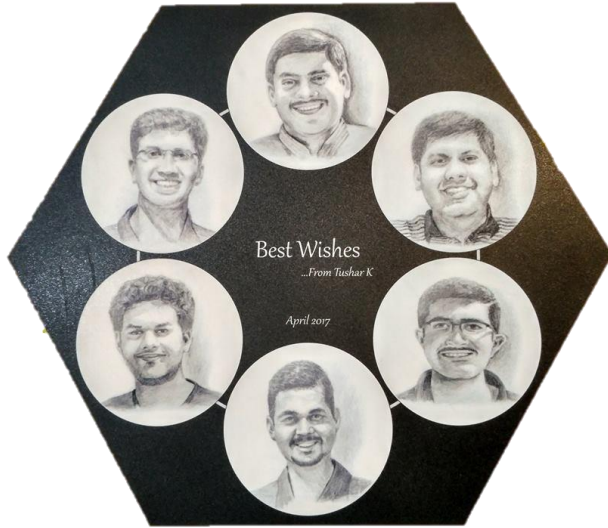
Tushar Kulkarni

Machine Learning Engineer Intern

Master of Science Student at UC Irvine

Mentors

Sergei Azernikov, Andrey Gubenko, Chih-Chun Lin



Interesting facts about me?

Well...

75% - 80% introvert

Designing

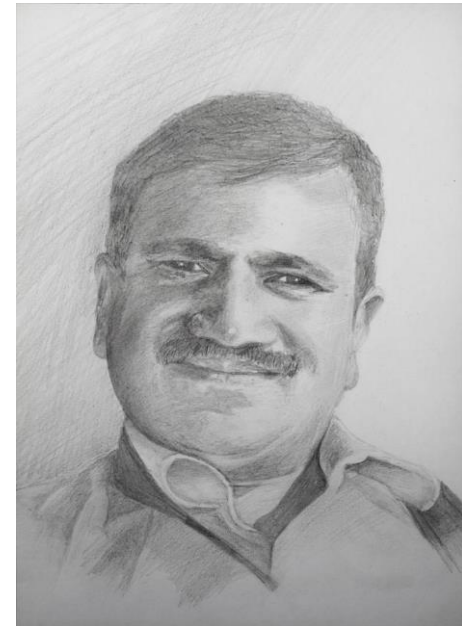
Sketching, Drawing, Painting

Photography

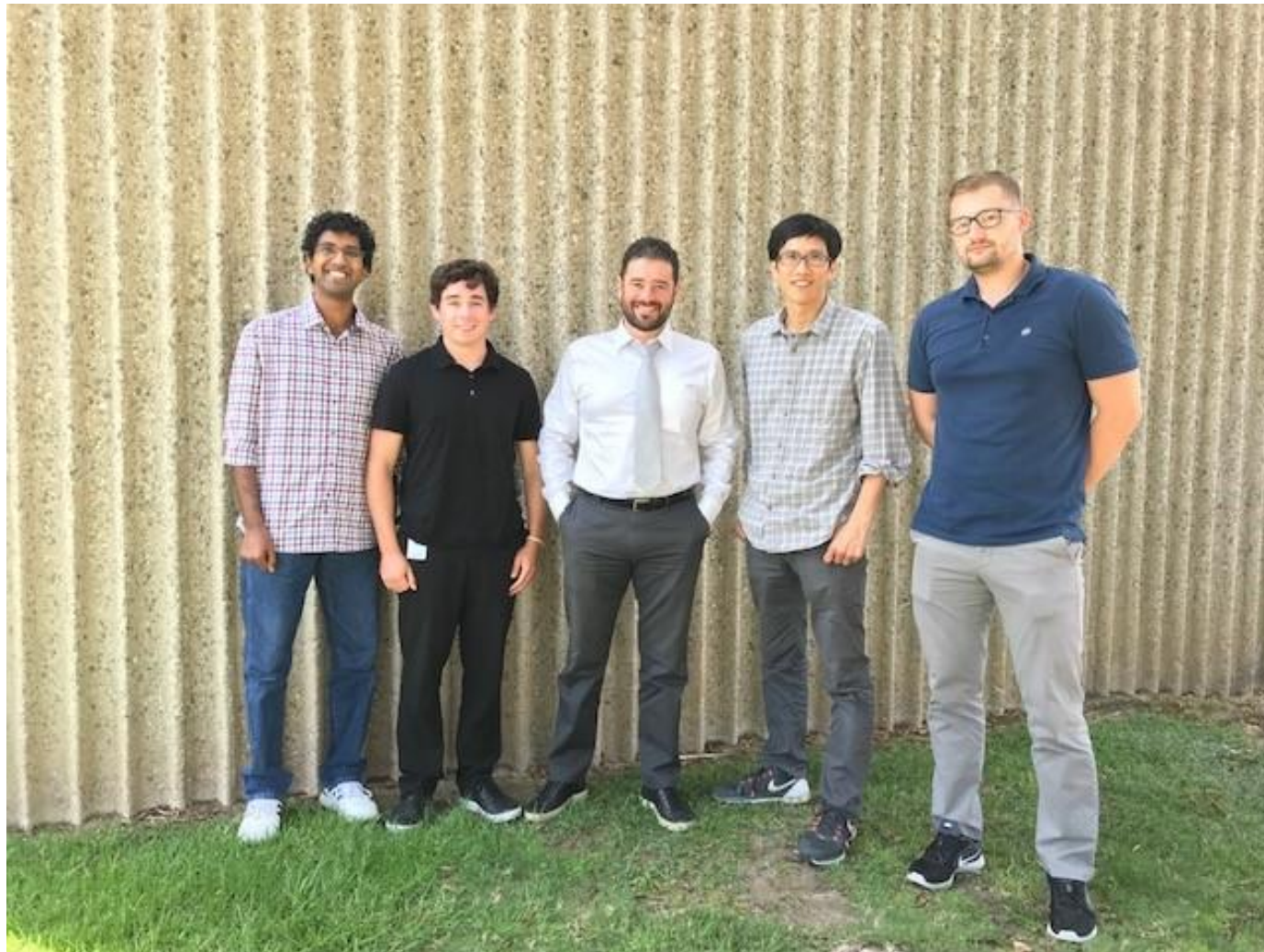
Travelling, Hiking

Books

Computer Science



My Team – Machine Learning



Credits: Gavin Goddard

The things I can't explain right now...

Due to time limitation

...Let's call them MAGIC !!!

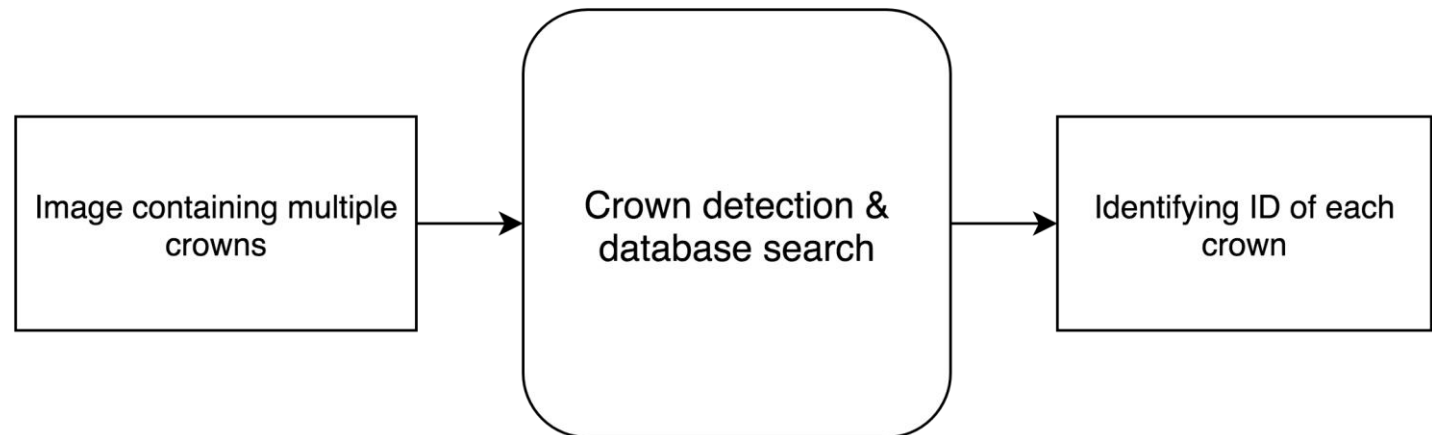
Why do we need this system?

- Fast identification of unknown crowns
- No dependency over other external identification methods
e.g. Barcode, Text Labels

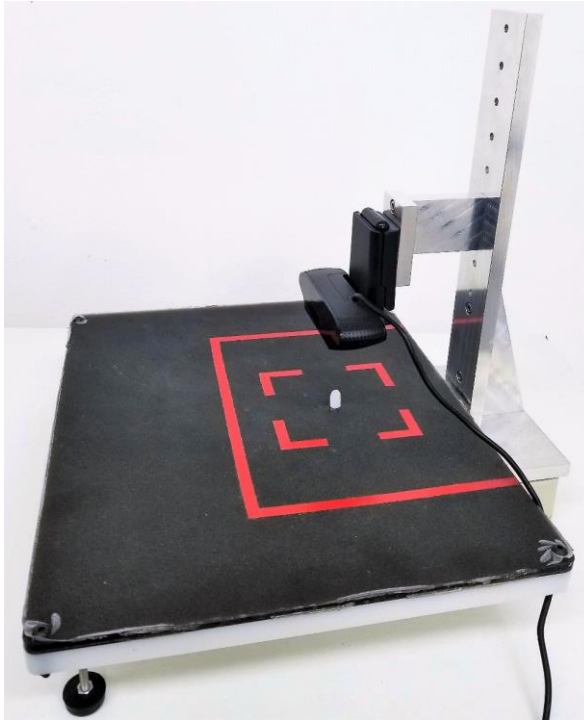
Why Machine Learning and Computer Vision?

- Removes redundant information
e.g. color, contrast, perspective, lighting (to certain extent)
- Recognizes patterns in crown rather than actual crown (features)

One of the reasons why
one to one pixel
matching is a bad idea

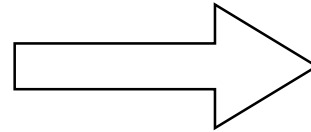


Crown Identification



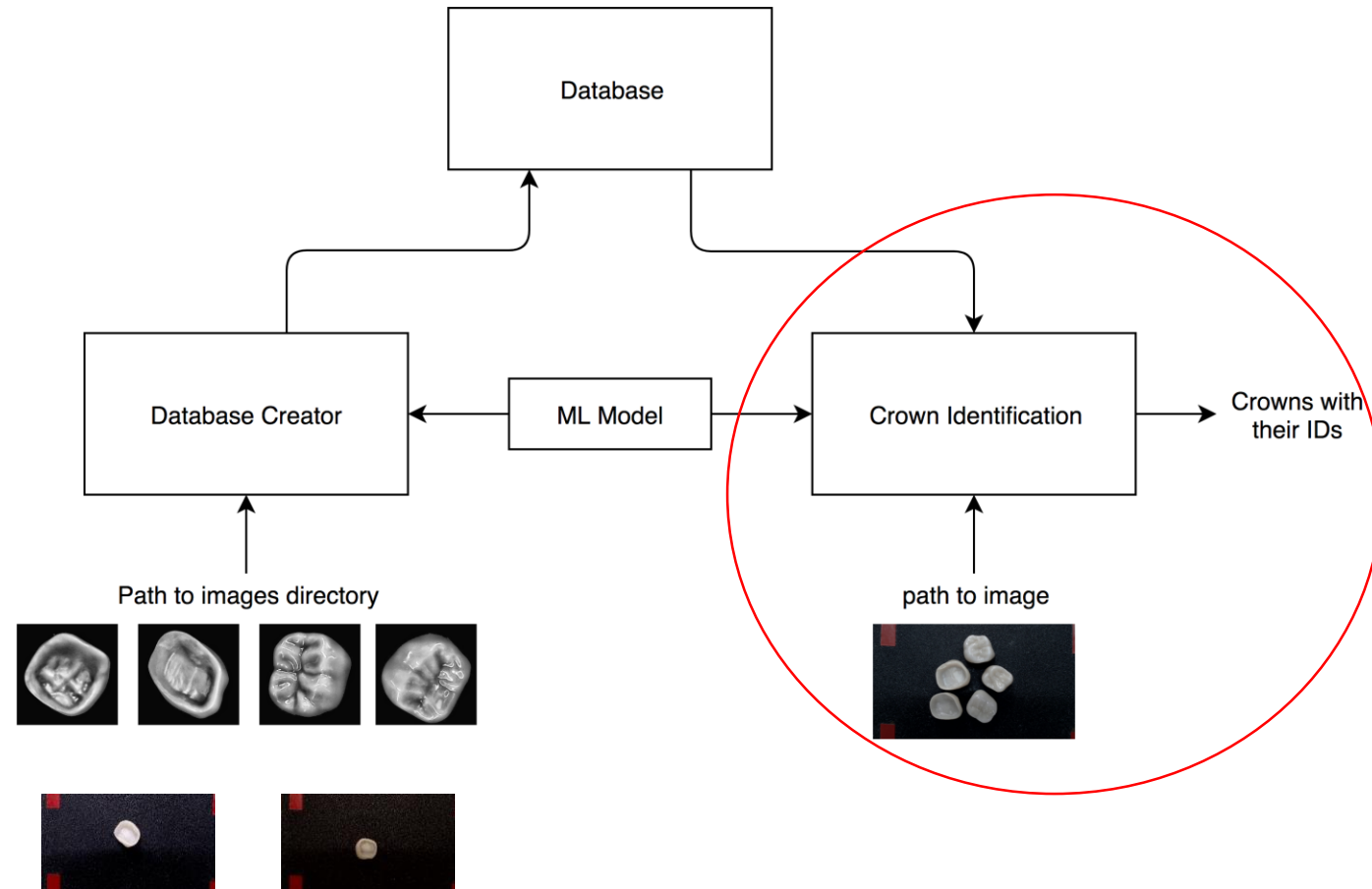
Project of Andrey Gubenko

Taking photos

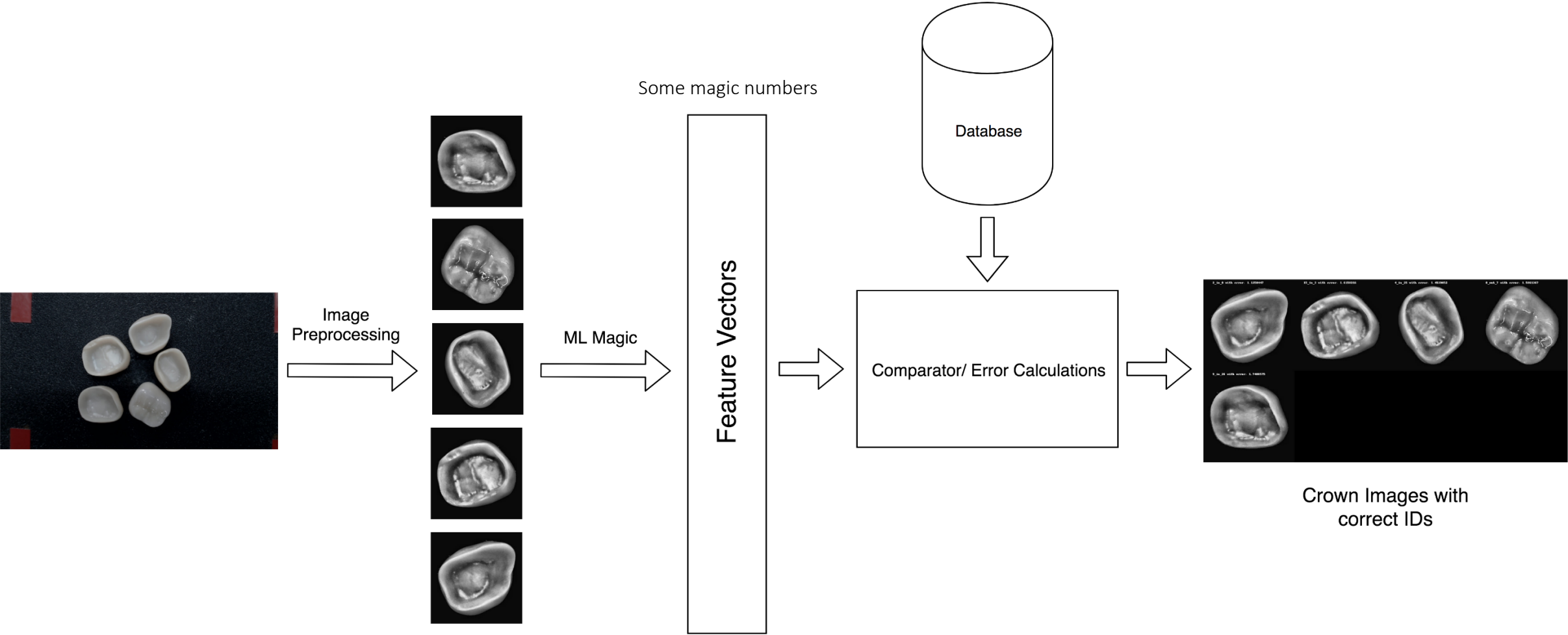


Block Diagram

A lot of magic happens here...



Crown Identification



Let's generate some graphs...

What I learned?

Teamwork and individual contribution

Real application of my knowledge as practical applications are filled with random variables that make theories so much unstable

Experience of designing a system from data collection to the deployment ready system

Thank you