HELPING FIGHT COMPUTER CRIME
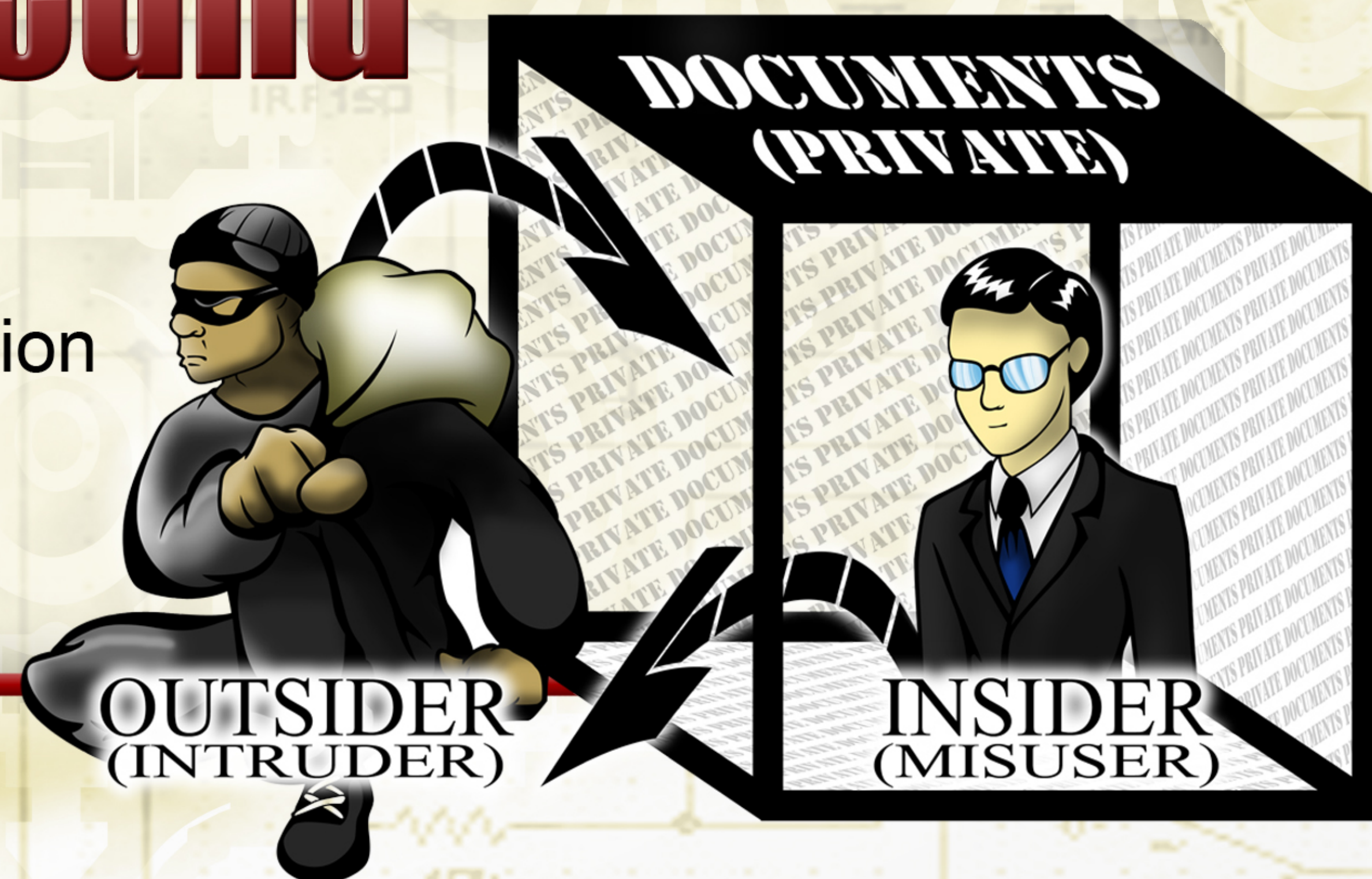
SPRING '07 ~ iPRO team 311

the MISUSE PROBLEM
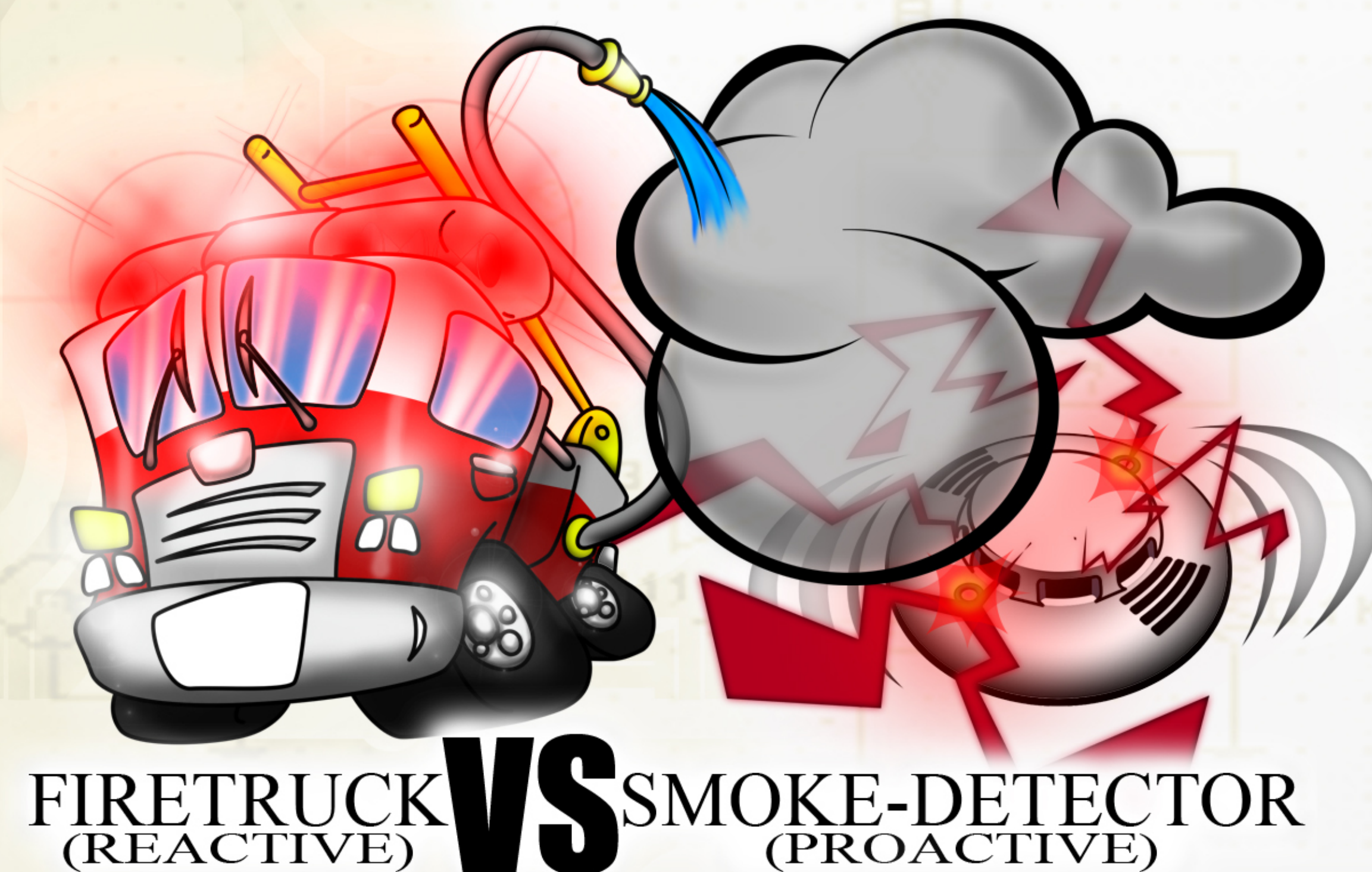
misuse

Background

Misuse vs. Intrusion

DOCUMENTS (PRIVATE)

OUTSIDER (INTRUDER)

INSIDER (MISUSER)

Problem

- Computer misuse is much more rampant than intrusion
- No existing proactive commercial software
- $178 billion per year cost
- No current way to test automated misuse detection

FIRETRUCK (REACTIVE) **VS** SMOKE-DETECTOR (PROACTIVE)

Solution

- Develop dataset generation tools
- Create human-generated dataset for testing
- Build misuse detection prototype
- End Solution: detect misuse in real time

Procedure

- Break team into subteams
- Create data collection software
- Collect data (ran queries)
- Build data analysis software
- Analyze data

Results

- 11.8 GB data set
- 168 user reports from 12 individual profiles
- 4,552 total minutes recorded
- 1,339 queries
- 5,308 webpages inspected
- 95,419 keystrokes logged
- Basic misuse detection algorithms implemented on data set with accuracy of 80%
- Operating System stats

Team

Alana Platt (Project Leader)
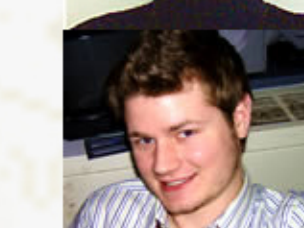Graduate ~ Computer Science
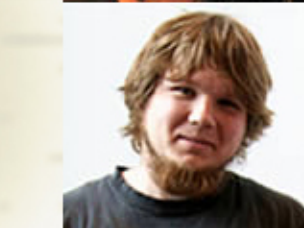
Jordan Wilberding (Graduate Advisor)
Graduate ~ Computer Science

Dr. David Grossman (Faculty Advisor)
Computer Science

Dr. Nazli Goharian (Faculty Advisor)
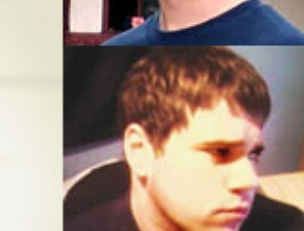Computer Science
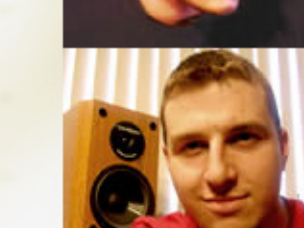
Bill Alton
Sophomore ~ Computer Science
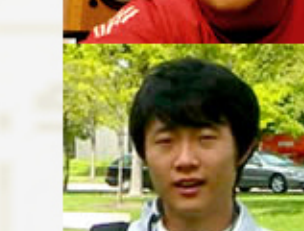
Young Cho
Senior ~ Applied Mathematics

Justin Choriki (Design Team Leader, Graphics Production)
Sophomore ~ Mechanical Engineering

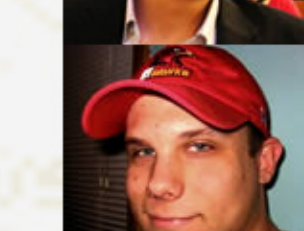Matt Holmes
Senior ~ Computer Information Systems

Daniel Hyc (Web Designer & Brochure Team Leader)
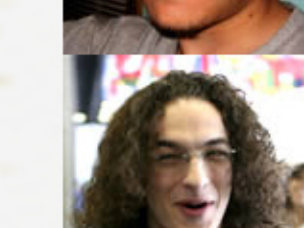Senior ~ Computer Science

Heeyeol Jeong (Statistical Analysis & Print Content)
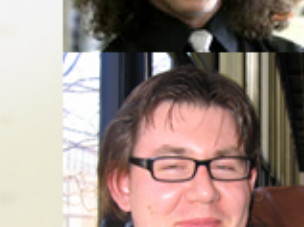Senior ~ Electrical Engineering

Jongmin Lim (Query Processing)
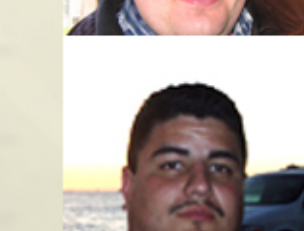Senior ~ Electrical Engineering/Applied Mathematics

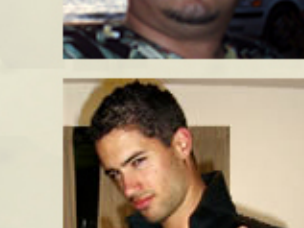Mark Malanowski
Junior ~ Computer Science

Yacin Nadji
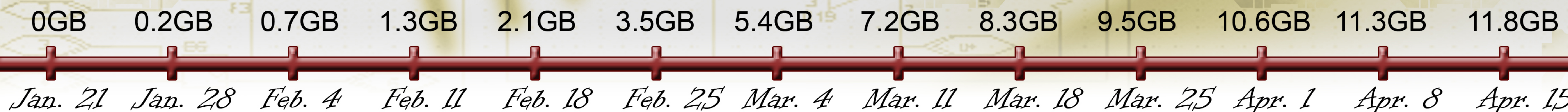Sophomore ~ Computer Science

Peter Niedzinski
Junior ~ Biology

Gerardo Sanchez
Senior ~ Civil Engineering

Jason Soo
Sophomore ~ Computer Science

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iPRO day