CMPT 400/405
Seminar Review

Speaker: Dot Technology Faculties (Rob Saik)
Topic: Dot is Autonomous Farming
Date: March 19, 2019

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Review

A. Motivation:
    a. The speaker first showed a picture which is a comparison of the differences between 1900 and 1913 New York City Main Avenue. In 1900, there just had a few vehicles on the road, but 13 years later, the number of vehicles increased a lot.
    b. The speaker wanted to show that new technologies are growing fast, and the vehicle changed the world.
    c. The speaker then talked about the broad acre farming today. In current framing, farmers are using very large equipment, operators present all times because operators are required to perform turn at headlands.
    d. The speaker mentioned that the bigger equipment is not better because of the compaction, difficult road transportation, the partial pass inefficiencies.

B. Methods:
    a. Introduction to DOT
        i. Dot is an autonomous farm technology company. They provide a platform named Dot Power Platform. This platform is a mobile diesel-powered platform designed to handle a large variety of implements commonly used in agriculture, mining, and construction.
        ii. Dot provides the short- and long-range sensors for their platform which are pretty accurate and attentive.
        iii. They are making services for farmers.
    b. The objective to reign the inefficiencies of framer's equipment.
        i. Dot is making smaller, more nimble units for their farmer equipment.
        ii. They are trying to make less time overlapping applied product.
        iii. They wonder to make lower horse-power requirements per acres and make a higher degree of functionality equipment.
        iv. They are trying to make autonomous, monitored remotely for their equipment, so famers could have lower labor cost. This part might change famers/operators' business, agronomy, and lifestyle.
    c. Pricing
        i. Dot Power Platform: 260,000 per year.
        ii. Seeder Implement: 160,000 per year.

iii. Connect Sprayer: 175,000 per year.
iv. DOT Harvet: TBA

d. Collaboration Dot and University of Saskatchewan
    i. Cloud Service
        1. Data Analytics / Predicative analytics
        2. Environmental Data
        3. IMU data
    ii. Hardware Development
        1. IoT Hard Device
    iii. AI Development
        1. Classification for modeling
        2. Obstacle detection, localization, tracking, avoidance
        3. Multi-Dot operations

e. Future
    i. Dot might cooperate with Uber, Tesla, and Amazon in the future.
    ii. Their long-term goal is reducing overall distribution cost to farmers.
    iii. They will try to use direct links with real time feedback to connect with farmers.
    iv. They are requiring mechanical design engineers, industrial engineers, and software developers right now.

C. What did you learn about research methods/Software development strategies from this talk, if anything?
    a. Bigger equipment for agriculture is not better.
    b. Dot is an autonomous farm technology company and hiring careers right now.
    c. They have small teams (they totally have 17 people), but they are doing many things (software, hardware)

D. Conclusions:
    a. Dot has great teams. It performs great ideas and skills to connect the software and hardware. New technology can change everyone's life. What they are doing is to change farmers life.

E. Summary of talk:
    a. This presentation is mainly introduced Dot, and what they are doing, what they have done, and the future.
    b. Dot is giving some great job opportunities for students.

F. Questions/Comments:
    a. Is the internship only open to Students who complete the 4-year bachelor's degree?
        i. No, students who are in the 3rd year also can join.