

PREPARING FOR THE SCHOOL OF 2024

AI, MACHINE LEARNING, VR AND AR



EDUCATION • CHARACTER • LEADERSHIP
PINE CREST
SCHOOL

WHO WE ARE



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PINE CREST
SCHOOL



Kelly Schuster-Paredes

@KellyPared on Twitter

- ▶ Middle School Computer Science Teacher
- ▶ Education & Curriculum Designer
- ▶ 2nd Year Coding
- ▶ 20+ Years Teaching
- ▶ Co-host of Teaching Python

```
kelly_fun_facts = {'origin': 'Sebastian, Florida',  
                  'countries_taught_in': ['Peru', 'USA', 'UK']}
```



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Sean Tibor

@smtibor on Twitter

- ▶ Middle School Computer Science Teacher
- ▶ 2nd Year Teaching
- ▶ Transfer from IT and Digital Marketing 15+ Year Career
- ▶ Co-host of Teaching Python

```
sean_fun_facts = {'origin': 'Anchorage, Alaska',  
                  'can_sew': True}
```



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"With rapid and persistent developments in technology, it is impossible to fully predict what the future of work or the future of learning will entail."

– Dr. Dana Markham, President, Pine Crest School



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Igniting passion through progressive learning experiences.

Strategic Goals

- ▶ Teach an entrepreneurial mindset
- ▶ Develop an artificial intelligence and machine learning curriculum supported by cutting-edge technology.
- ▶ Create more individualized learning programs and differentiated pathways
- ▶ Explore emerging technologies and integrate them into classroom instruction



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THINGS WE DIDN'T HAVE IN 2014

- ▶ Apple Watch
- ▶ Alexa (November 2014)
- ▶ Oculus Rift (March 2016)
- ▶ Flipgrid
- ▶ Google Classroom



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NO LONGER RELEVANT XKCD FROM 2014



IN CS, IT CAN BE HARD TO EXPLAIN
THE DIFFERENCE BETWEEN THE EASY
AND THE VIRTUALLY IMPOSSIBLE.



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OUR TOP THREE EMERGING TECHNOLOGIES

- ▶ **Artificial Intelligence & Machine Learning**
- ▶ **Augmented Reality & Virtual Reality**
- ▶ **Data Science**



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ESSENTIAL QUESTIONS:

- ▶ What emerging technology trends might we find in our classrooms in 5 years?
- ▶ How do we use emerging technologies to become the disruptors instead of the 'disrupted'?
- ▶ How do we prepare our teachers for the changes that exist with emerging technologies?
- ▶ How do we know what to invest in?





TECHNOLOGY TRENDS IN OUR CLASSROOMS, FOR TEACHERS, AND FOR SCHOOLS

How do we ALL move from consumers to active
curators and creators?



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IN THE COMPUTER SCIENCE CLASSROOM

- ▶ AI is easy (sort of)
- ▶ Students as VR/AR creators
- ▶ Python, Machine Learning, and IoT



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INTEGRATION INTO OTHER CLASSROOMS

- ▶ helps students develop multifaceted understanding
- ▶ improves knowledge retention



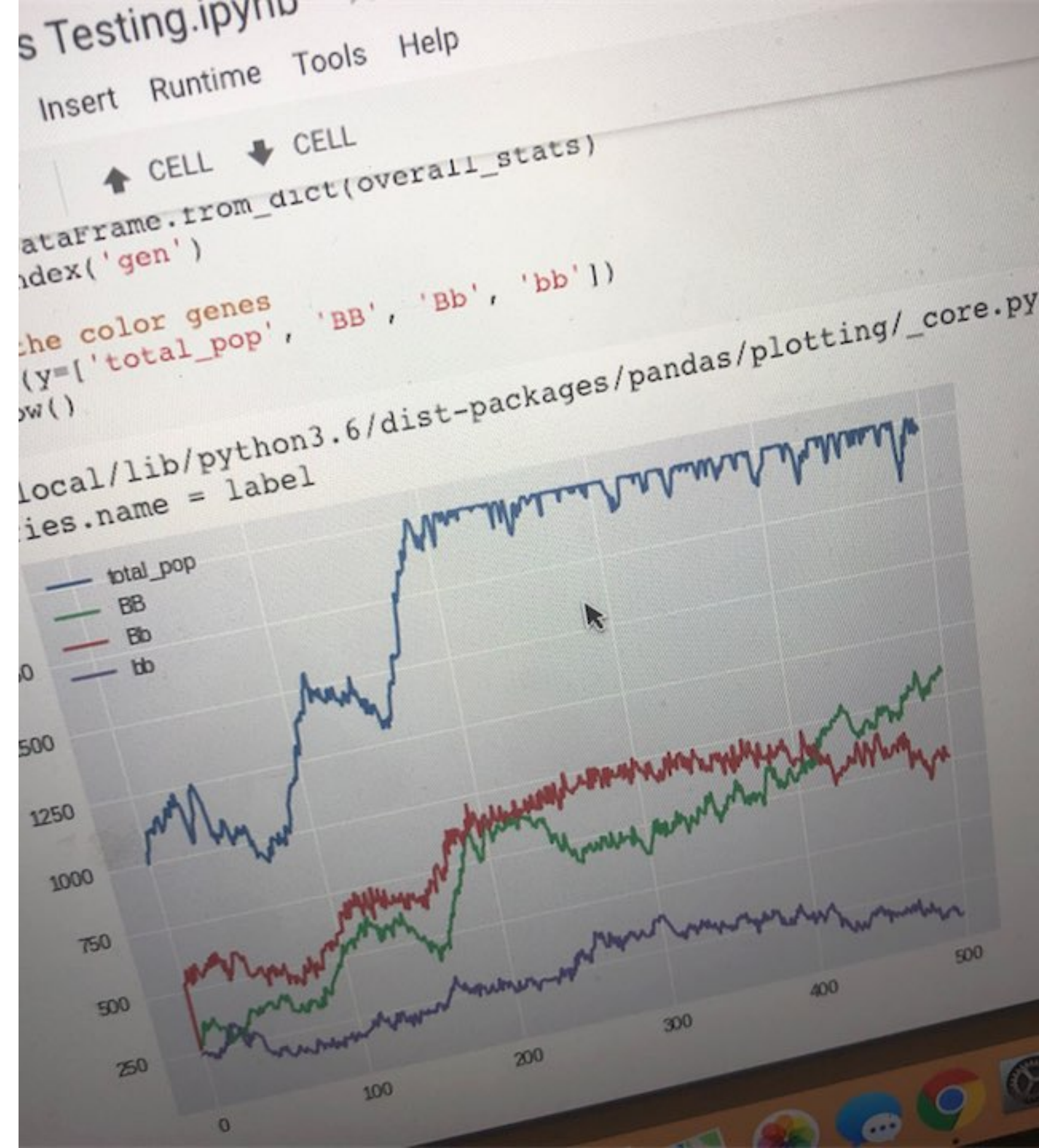
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MATH

- ▶ Need More Statistics
- ▶ Apps that Solve Problem Sets
- ▶ Applied Math & Novel Problems
- ▶ MangaHigh

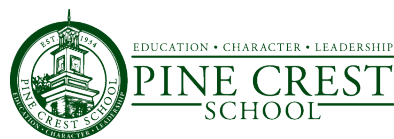


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WORLD LANGUAGES

- ▶ VR Travel
- ▶ Cultural immersion
- ▶ Mondly App for AR Language Learning



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ENGINEERING AND MAKER SPACES

- ▶ AI-assisted design
- ▶ VR modeling and simulation



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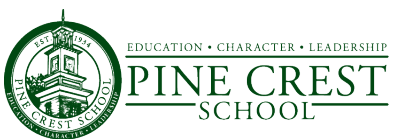
ENGLISH

- ▶ **AI powered software - Reading plus; adaptive literacy intervention**
- ▶ **AI-generated stories**
- ▶ **Ethical AI discussions**
- ▶ **Interactive Storytelling with Google Home**
- ▶ **Becoming Homeless from Stanford**



HUMAN PROMPT

In a shocking finding, scientist discovered a herd of unicorns living in a remote, previously unexplored valley, in the Andes Mountains. Even more surprising to the researchers was the fact that the unicorns spoke perfect English.



AI STORY

The scientist named the population, after their distinctive horn, Ovid's Unicorn. These four-horned, silver-white unicorns were previously unknown to science.

Now, after almost two centuries, the mystery of what sparked this odd phenomenon is finally solved.

Dr. Jorge Pérez, an evolutionary biologist from the University of La Paz, and several companions, were exploring the Andes Mountains when they found a small valley, with no other animals or humans. Pérez noticed that the valley had what appeared to be a natural fountain, surrounded by two peaks of rock and silver snow.



SUBJECT AREA CURVEBALLS

WHAT ABOUT PE? HEALTH CLASS?



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A woman with dark hair tied back is wearing a VR headset and holding a controller. She is sitting on a white stationary bike in a living room. In the background, there is a dark brown sofa and a large window looking out onto a green landscape. The scene is brightly lit.

M

FITNESS MEETS

VR FLYING

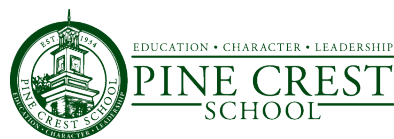
FOR EDUCATORS



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CLASSROOM MANAGEMENT

- ▶ Voice Assistants
- ▶ Classroom AI Cameras (e.g. DeepLens)
- ▶ Cleaning robots
- ▶ Environmental automation



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AUTOMATION OF REPETITIVE TASKS

- ▶ **AI-powered Essay Grading**
- ▶ **Attendance**
- ▶ **Student trend analysis**



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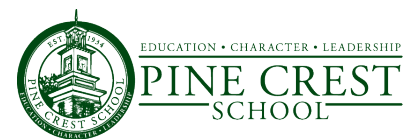
FACILITATION OF INFORMATION

- ▶ **Intelligent Tutoring Systems**
- ▶ **Assignment Feedback Systems: Turnitin**
- ▶ **Natural Language Processing Systems**



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FOR SCHOOLS



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LEVERAGING STUDENT INFORMATION SYSTEMS

What is the data in your SIS telling you?

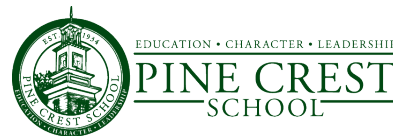


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TEACHER PROFESSIONAL DEVELOPMENT

Focus on:

- ▶ **AI/ML Innovation by subject area**
- ▶ **Student access to AI and AR**
- ▶ **Workload Reduction (Automate the boring stuff!)**



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INNOVATION CULTURE

How will you grow your school's culture in a way that embraces technology innovation?



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JOIN US AT THE SEVENTH ANNUAL INNOVATION INSTITUTE



INNOVATION
institute Hosted by Pine Crest School

MAKING THE FUTURE

Seventh Annual Innovation Institute

April 19-21, 2020

Location: Fort Lauderdale and Boca Raton, Florida

Pre-conference: Sunday, April 19, 2020

Conference: Monday, April 20, 2020 and Tuesday, April 21, 2020

Keynote Speakers: David Hamilton and Paloma Cotton-Herman



BOUTIQUE CONFERENCE SETTING



LISTEN-AND-LEARN INSPIRE SESSIONS



PROMOTES ACTIVE LEARNING



SHARE FAIR



EXTENDED HANDS-ON WORKSHOPS



STRATEGIES TO INFUSE TECHNOLOGY,
MAKER EDUCATION, & CODING INTO
THE CURRICULUM

To learn more visit www.pinecrest.edu/innovationinstitute



Q&A



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THANK YOU



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