Building a Minimal Linux System from Source

Ruhi Shah: UC Berkeley, Aadya Huddar: UC Los Angeles, Preston Silva: Cal Poly San Luis Obispo | Rebecca Haluska and Elena Green, Lawrence Livermore National Laboratory

ABOUT ME

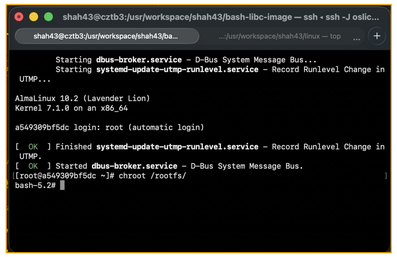
Ruhi Shah
- Major: Electrical Engineering and Computer Sciences
- I want to refine my technical skills in both the hardware and software aspects of robotics, and expand my knowledge of natural language processing.
- LLF provides an avenue for me to network with my peers and learn more about what the lab offers.

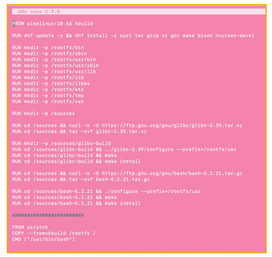
Aadya Huddar
- Major: Computer Science
- My goals are to combine my passion for computer science with another field I have a particular interest in, such as medicine or economics, and I hope to explore the area of computer vision.
- This fellowship was important to me because it allowed me to network and form important connections.

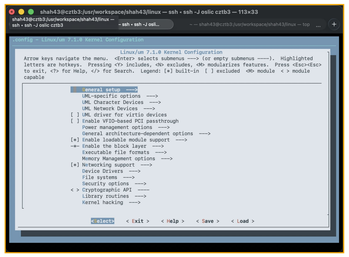
Preston Silva
- Major: Computer Science
- I aspire to advance my skills as a developer and engineer to make positive, impactful contributions to society.
- The fellowship at LLNL forges a connection between myself and the lab's community, resulting in more effective work

SUMMER RESEARCH

- Abstract - Understanding Linux is an important foundation for all computer systems, and is not something that is normally covered by the regular college curriculum. Through the duration of the Early Internship Program, our goal was to more thoroughly comprehend how the systems in a computer interact on a deeper level and also understand the essential skills necessary to pursue a career at the Lawrence Livermore National Laboratory.
- Methods:
  - Went back to the absolute basics and reviewed key concepts such as binary, assembly language, and computer hardware (RAM, CPU, motherboard, etc.)
  - Learned the fundamental ideas of Linux while virtually connecting to an LLNL supercomputer and also following LLNL specific guidelines. We learned how to successfully install and use the following:
    - → Kernel
    - → Operating system
    - → Modules/Packages
  - Applied this acquired knowledge to building our own working minimalistic Linux systems with basic packages such as bash and libc







LLF AWARD

Ruhi Shah
- My LLF funds will be used to contribute to my college tuition and other educational expenses such as my housing.
- The fellowship has introduced me to so many new opportunities around the lab and I look forward to learning even more.

Aadya Huddar
- My LLF funds will be used to pay for my housing and meal plan this fall.
- This fellowship has given me the opportunity to explore different career paths, and has given me clarity on whether I want to go into research or industry in the future.

Preston Silva
- The LLF funds will be used to cover the cost of traveling to the lab and attending college.
- This fellowship has expanded my network in the scientific community and aided my exploration of opportunities in the lab.

This work was performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344.

LLNL-PRES-2021544