Andrew, lots of interesting ideas here. I'll give a little feedback at this point.

Sports: There are lots of interesting things that people are doing with sports statistics. If you go to fivethirtyeight, you can read about some of their more involved predictive models, for example. Beware of picking a problem that's too "easy" like criminal backgroud per league, that \_sounds\_ like you're talking about just calculating a percent.

R Packages: This is a cool idea, and doing the work to make a real R package is definitely a good project.

Geospatial: Not sure what Railways project entails. Invasive species sounds interesting, while the square footage might sound too "easy" unless more is done to explain why it's not easy.

Cryptography: Deep fakes sounds interesting, but how to preceed and what's required I'm not sure about.

Finance: Some I'm not so sure about without more research, but I can imagine finding good topics. Comparing crypto to more normal stock prices, and comparing how they respond to news that moves the market would be interesting.

For many of these, the next step would be thinking about what data you could get (and of course narrowing the choice down).

In terms of publishing, it might really depend on the topic. I'd suggest if that's a goal, get started early talking to a mentor about possible projects.