## Solid State Drive (SSD)

- → Completely solid state (no moving parts), remembers data by storing charge (like RAM)
- ✓ Same interface as HDD (linear array of sectors)
- √ No mechanical seek and rotation times to worry about (SSD are way faster than HDD)
- ✓ Lower power consumption and heat (better for mobile devices)
- More expensive than HDD yet (but getting cheaper)
- Limited durability as charge wears out over time (but improving)
- Limited # overwrites possible
  - Blocks wear out after 10,000 (MLC) 100,000 (SLC) erases
  - Requires Flash Translation Layer (FTL) to provide wear levelling, so repeated writes to logical block don't wear out physical block
  - FTL can seriously impact performance

## Acknowledgments

Some of the course materials and projects are from

- Ryan Huang teaching CS 318 at John Hopkins University
- · David Mazière teaching CS 140 at Stanford