

# Contents

► Issue 90 ► February 2020

## Cover Feature

### 24 Magic mirror

## Regulars

- 06 World of Raspberry Pi
- 92 Your letters
- 97 Next Month
- 98 The Final Word

## Project Showcases

- 08 WeatherMan
- 12 DARVA: The Event Assistant
- 14 Heart-rate monitor
- 16 Audio radar
- 18 Tri-Lasers for Felines
- 20 Raspberry Pi Recovery Kit



24



Raspberry Pi Recovery Kit



18

Tri-Lasers for Felines

**DISCLAIMER:** Some of the tools and techniques shown in The MagPi magazine are dangerous unless used with skill, experience, and appropriate personal protection equipment. While we attempt to guide the reader, ultimately you are responsible for your own safety and understanding the limits of yourself and your equipment. Children should be supervised. Raspberry Pi (Trading) Ltd does not accept responsibility for any injuries, damage to equipment, or costs incurred from projects, tutorials or suggestions in The MagPi magazine. Laws and regulations covering many of the topics in The MagPi magazine are different between countries, and are always subject to change. You are responsible for understanding the requirements in your jurisdiction and ensuring that you comply with them. Some manufacturers place limits on the use of their hardware which some projects or suggestions in The MagPi magazine may go beyond. It is your responsibility to understand the manufacturer's limits.



34

Overclock Raspberry Pi 4



38

3D-print a keyring



66

Thermal cases group test



82

Pranjali Pathak interview

**WIN  
ONE OF  
FIVE**

**PROTODOCK  
ADD-ONS!**



95

## Tutorials

- 34 Overclock Raspberry Pi 4
- 38 3D-print a keyring
- 42 Room guard
- 47 Pi Bakery: Hex-A-Pad
- 54 C & GTK Glade layout editor

## The Big Feature

58



New Year projects!

## Reviews

- 66 Thermal cases group test
- 74 Pirate Audio
- 76 RetroFlag GPi Case
- 78 Top 10 game making projects
- 80 Learn Python

## Community

- 82 Pranjali Pathak interview
- 84 This month in Raspberry Pi
- 88 Events calendar